

FINAL
ENVIRONMENTAL ASSESSMENT
FOR
PROPOSED CONSTRUCTION
FREIGHT TRANSFER FACILITY



Buckley Air Force Base, Colorado

JUNE 2007

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Cover Sheet
Draft Environmental Assessment of the
Construction and Operation of a Freight Transfer Facility
Buckley Air Force Base, Colorado

Responsible Agency: 460th Space Wing (460 SW), Buckley Air Force Base (AFB), Colorado

Affected Location: Buckley AFB, Colorado

Document Designation: Draft Environmental Assessment

Proposed Action: Under the Proposed Action, Air Force Element Program Resource Office (AFE PRO) and Defense Courier Service (DCS) is proposing to construct and operate a Freight Transfer Facility at Buckley AFB. This proposed 12,000 square foot (ft²) facility, associated parking, utilities, and security will accommodate the mission beddown of AFE PRO & DCS on Buckley AFB. The proposed facility will be sited adjacent to taxiway H, north of taxiway D. Construction is currently planned for 2007.

Action Alternative 1: Under Action Alternative 1 the new Freight Transfer Facility would be built on a site located north of Steamboat Avenue, west of Loveland Street in a land use area currently classified as Outdoor Recreation. The site would be located approximately ¼ mile from a proposed FamCamp, in a currently undeveloped area outside of the airfield fence. The design and footprint would be identical to that described for the Proposed Action.

Action Alternative 2: Under Action Alternative 2 the new Freight Transfer Facility would be located north of Silver Creek Street and East of Taxiway W in a land use area currently classified as Airfield. The site is currently undeveloped within the airfield fence. The design and footprint would be identical to that described for the Proposed Action.

No Action Alternative: Under the No Action Alternative, the proposed project would not be built, nor would the expanding mission at Buckley AFB be met

Written comments and inquiries regarding this document should be directed to Ms. Elizabeth Meyer, NEPA Compliance Program Manager, 460th CES/CEV; Tel. 720-847-7159; email Elizabeth.meyer@buckley.af.mil.

Privacy Advisory

Your comments on this Draft EA are requested. Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

**FINDING OF NO SIGNIFICANT IMPACT
PROPOSED CONSTRUCTION OF A FREIGHT TRANSFER FACILITY
BUCKLEY AIR FORCE BASE, COLORADO**

AGENCY: United States Air Force, 460th Space Wing

BACKGROUND

The United States Air Force (USAF) conducted an Environmental Assessment (EA) of the potential environmental and social consequences of implementing proposed construction and operation of a Freight Transfer Facility at Buckley Air Force Base (AFB), pursuant to the National Environmental Policy Act (NEPA) of 1969 (42 United States Code §4321 to §4370d), Council of Environmental Quality's (CEQ) implementing regulations (40 Code of Federal Regulations Part 1500-1508), and the Air Force Environmental Impact Analysis Process (EIAP) as promulgated in 32 CFR Part 989 (EIAP, 6 July 1999, as amended by 66 FR 16866, 28 March 2001). The EA is incorporated by reference herein.

PURPOSE AND NEED

Current requirements of the Air Force Element Program Resource Office (AFE PRO) and Defense Courier Service (DCS) on Buckley AFB are expanding. Current operations involve trucking cargo between Colorado Springs and Denver several times a week to meet flights at Buckley AFB. Under on-going operations, Air Mobility Command (AMC) directs C-130 aircraft to fly into Buckley AFB on a weekly basis for cargo transport. These flights have been on-going since the early 1990s. The aircraft is usually used to store in-transit cargo while on the ground. When the amount of cargo required to be stored exceeds the capacity of the aircraft, government contractors are utilized to store the excess cargo. The increasing amount of cargo being stored, consolidated and/or distributed at Buckley AFB is exceeding the capacity of the government contractors. Additionally, the mission moves sensitive and/or classified cargo, requiring the aircraft to be roped off and guarded by Buckley AFB security personnel.

PROPOSED ACTION

AFE PRO & DCS are proposing to construct and operate a Freight Transfer Facility at Buckley AFB. This proposed 12,000 square foot (ft²) facility, associated parking, utilities, and security will accommodate the mission beddown of AFE PRO & DCS on Buckley AFB. The proposed facility will be sited adjacent to taxiway H, north of taxiway D. This action will alleviate the requirement for security forces to guard aircraft with classified cargo as it will now be stored inside a secure facility.

ALTERNATIVES CONSIDERED

In addition to the Proposed Action, a No-Action Alternative (as prescribed by CEQ regulations) and two alternative site locations were considered and evaluated in the EA. Under the No Action Alternative, the proposed project would not be built, nor would the expanding mission at Buckley AFB be met. The USAF also evaluated two alternative sites at various locations across the base for siting the proposed project. The alternative sites were not chosen since they did not meet the selection criteria as effectively as the proposed action.

SUMMARY OF ANTICIPATED ENVIRONMENTAL IMPACTS

Consideration of effects described in the EA and a finding that they are not significant is a necessary and critical part of this Finding of No Significant Impact (FONSI) as required by 40

CFR 1508.13. Significance criteria are defined in 40 CFR 1508.27 to consider direct, indirect and cumulative impacts and the context and intensity of impacts. The potential impacts of the proposed action are analyzed in detail in the Affected Environment and Environmental Consequences section of the EA for the following resource areas and conditions: land use, air quality, noise, soils, water resources, biological resources (including vegetation, wetlands, wildlife, and threatened, endangered, and other sensitive species), hazardous materials and waste, solid waste and pollution prevention, transportation and utilities. The analyses indicated that implementing the proposed actions would have no significant direct, indirect or cumulative effects on the quality of the natural or human environment. Best management practices described in the EA and incorporated into the proposed action, including post-construction monitoring and documentation, are generally required of the proponent by laws, regulations, or USAF policies and are adopted by this decision.

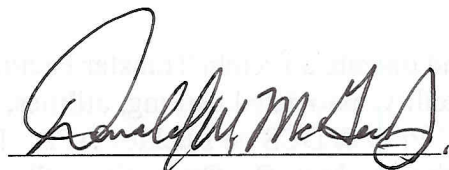
PUBLIC INVOLVEMENT

NEPA, CEQ regulations, and the EIAP at 32 CFR Part 989 require public review of the EA before approval of the FONSI and implementation of a Proposed Action. The Draft EA was made available for a 30-day Federal, state, and local agency and public review and comment period through publication of a Notice of Availability (NOA) in the March 23, 2007 edition of the Denver Post, Rocky Mountain Post, and Aurora Sentinel newspapers. Copies of the Draft EA and FONSI were distributed to individuals on the project mailing list and to various Federal, state, and local agencies, and in the Aurora, Denver, and CU-Boulder public libraries for dissemination. The public comment period on the EA closed on April 23, 2007.

FINDING OF NO SIGNIFICANT IMPACT

Based on the requirements of NEPA, CEQ regulations and the EIAP at 32 CFR Part 989, I conclude the environmental effects of the Proposed Action are not significant; therefore, an environmental impact statement is not required for these projects. The signing of this FONSI completes the USAF EIAP.

Approved:



DONALD W. MCGEE, JR., Colonel, USAF
Commander

21 Sep '07

Date

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ACRONYMS

460 SW	460th Space Wing
ac	acre
ACAM	Air Conformity Analysis Model
ADA	American Disabilities Act
AFB	Air Force Base
AFE PRO	Air Force Element Program Resource Office
AICUZ	Air Installation Compatible Use Zone
ANG	Air National Guard
AQCR	Air Quality Control Region
APCD	Air Pollution Control Division
AST	aboveground storage tank
BMPs	best management practices
CAQCC	Colorado Air Quality Control Commission
CATM	Combined Arms Training and Maintenance
CDPHE	Colorado Department of Public Health and Environment
CDOW	Colorado Division of Wildlife
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIP	Capital Improvements Program
CMU	Concrete Masonry Unit
CO	carbon monoxide
dB	decibel
DCS	Defense Courier Service
DERP	Defense Environmental Restoration Program
DNL	day-night level
DoD	Department of Defense
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EO	Executive Order
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
Ft	feet
Ft ²	square feet
FY	Fiscal Year
HAP	Hazardous Air Pollutants
HAZMART	Hazardous Materials Pharmacy
HVAC	heating ventilation and air conditioning
IRP	Installation Restoration Program
ITT	Information Ticket Tours
m	meter
m ²	square meter
m ³	cubic meter
MBTA	Migratory Bird Treaty Act
mm	millimeter

ACRONYMS

MMRP	Military Munitions Response Program
NEPA	National Environmental Policy Act
NLR	Noise Level Reduction
NO _x	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
ODS	Ozone Depleting Substances
P2	Pollution Prevention
PCB	polychlorinated biphenyl
pCi/L	picoCuries per Liter
PM _{10/2.5}	particulate matter particles equal to or less than 10/2.5 microns
ppm	part per million
PSD	Prevention of Significant Deterioration
QRP	Qualified Recycling Program
ROI	region of influence
RTD	Regional Transportation District
SCIF	Special Compartmented Information Facility
SIP	State Implementation Plan
SO ₂	Sulfur dioxide
SO _x	Sulfur oxides
SPCC	Spill Prevention and Countermeasure Control
SW	Space Wing
SWPPP	Storm Water Pollution Prevention Plan
TPY	tons per year
USC	U.S. Code
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
UXO	unexploded ordnance
VOC	volatile organic compound
WWII	World War II

This section describes the purpose and need for the proposed action at Buckley Air Force Base (AFB), provides summaries of the scope of the environmental review and applicable regulatory requirements, and presents an overview of the organization of the document.

Federal agencies are required to consider the environmental consequences of proposed actions in the decision-making process under the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] §4321 to §4370d) and the Council of Environmental Quality's (CEQ) implementing regulations (40 Code of Federal Regulations [CFR] Part 1500-1508). This Environmental Assessment (EA) for proposed construction of a Freight Transfer Facility at Buckley AFB was prepared in accordance with NEPA. Additionally, this EA complies with the Air Force Environmental Impact Analysis Process (EIAP) for the proposed action as promulgated in 32 CFR Part 989 (EIAP, 6 July 1999, as amended by 66 FR 16866, 28 March 2001), which implements NEPA, CEQ regulations, and Department of Defense (DoD) Instruction 4715.9 (Environmental Planning and Analysis).

1.1 BACKGROUND

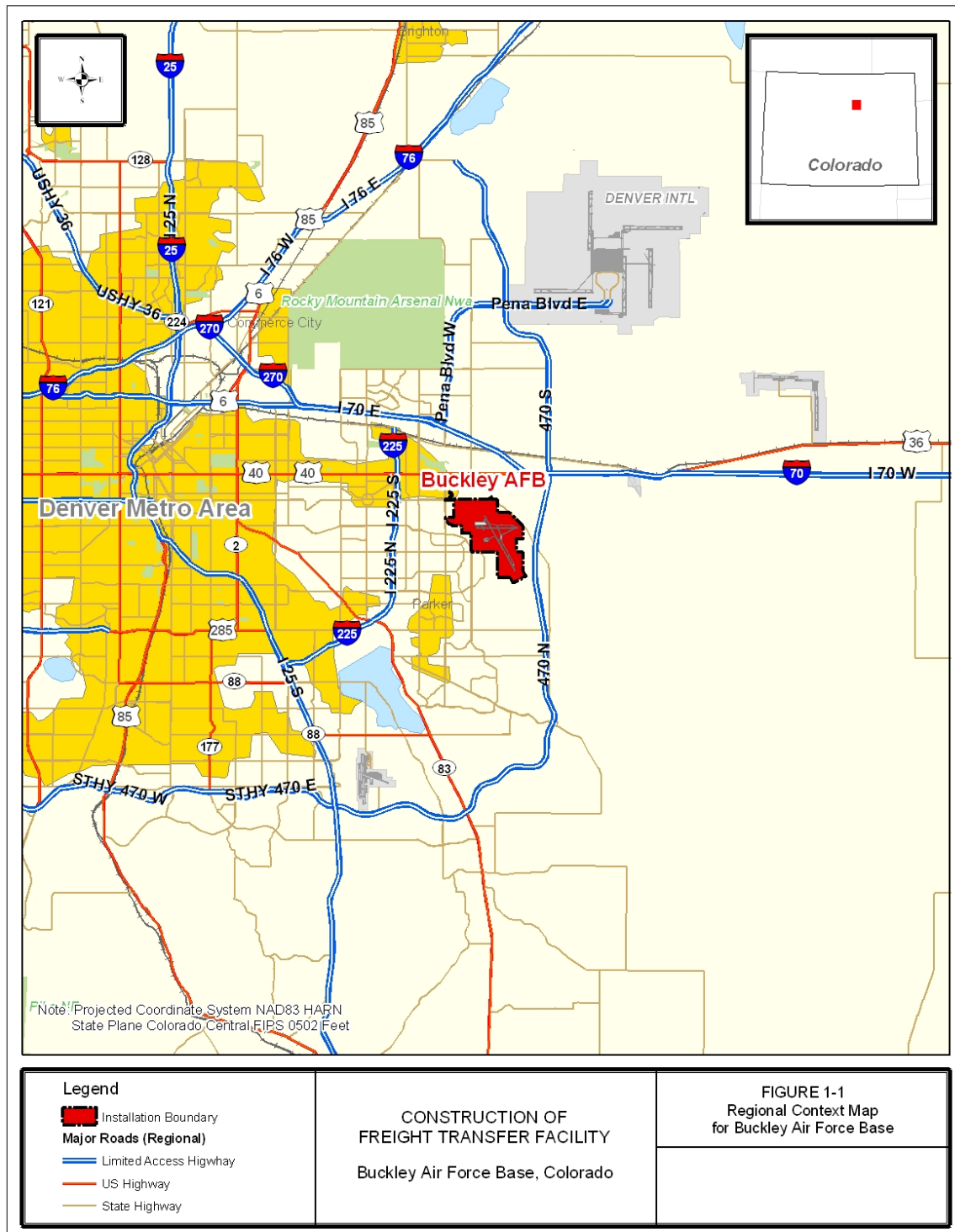
Buckley AFB occupies approximately 3,283 acres (1,328 hectares) adjacent to the city of Aurora, Arapahoe County, Colorado, within the Denver metropolitan area (Figure 1-1). The 460th Space Wing (460th SW), providing combatant commanders with superior global surveillance, worldwide missile warning, homeland defense and expeditionary forces, is the current host of the installation. The installation houses diverse missions, military services, and components that include: active duty, National Guard, and Reserve personnel from the Air Force, Army, Navy, Marine Corps, and Coast Guard to accomplish satellite support operations, fighter operations, installation support, and other important missions. Currently, there are approximately 2,712 active duty personnel, approximately 4,213 Guard and Reserve personnel, approximately 2,973 civilian employees, and approximately 2,811 contract employees at the base (Buckley AFB, 2005a). In addition, Buckley AFB serves approximately 77,000 retirees and approximately 16,363 dependents.

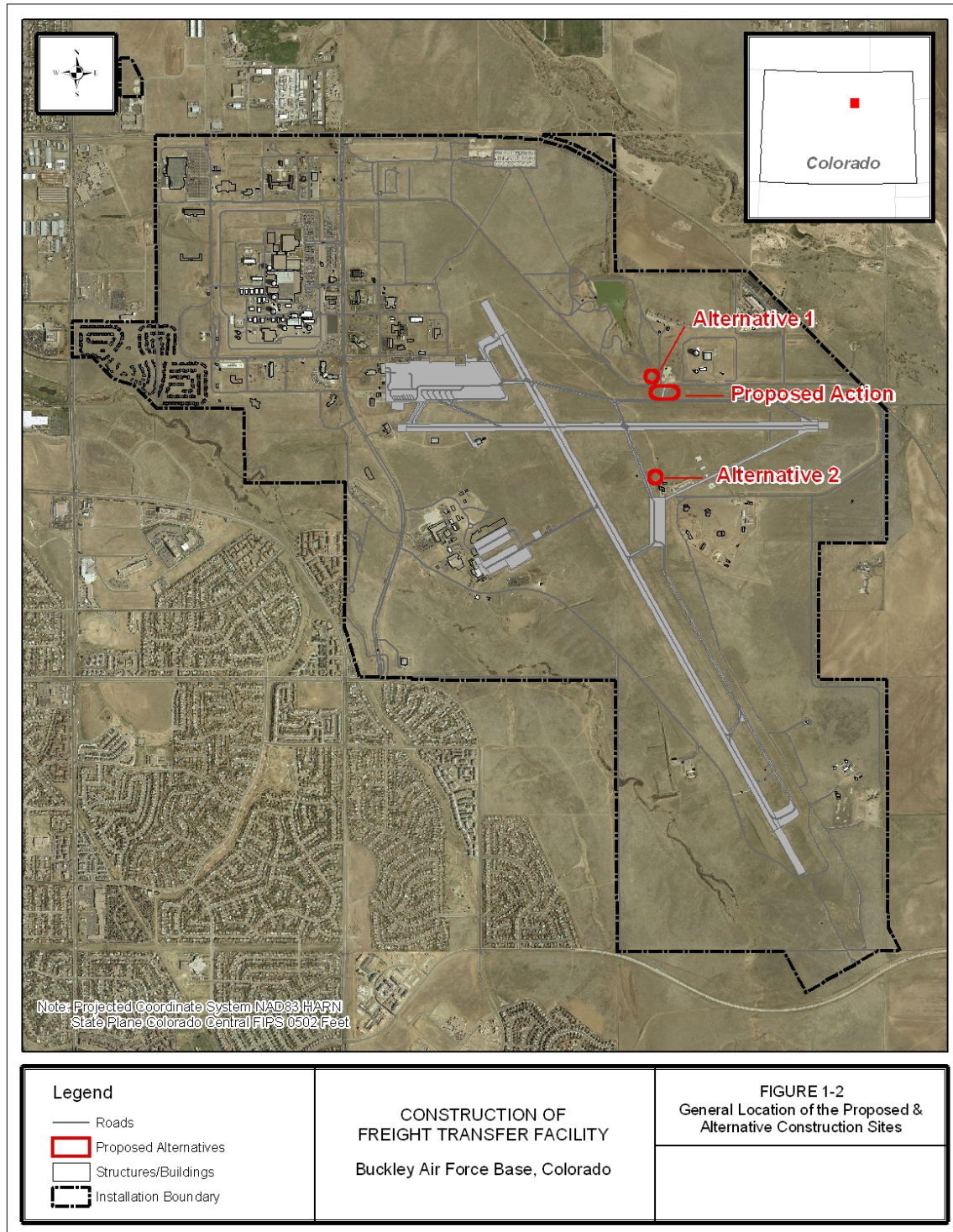
Buckley AFB is transforming from a minimally developed and landscaped installation for weekend influxes of Reserve and Guard personnel into a fully developed active duty AFB. The base must meet the needs of diverse military missions by providing facilities that satisfy different requirements while maintaining the look and feel of a singular, well planned military installation integrated into its natural environment (Buckley AFB, 2005).

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The United States Air Force (USAF) has prepared this EA to assess the environmental and social impacts resulting from the proposed action to construct and operate a Freight Transfer Facility at Buckley AFB (Figure 1-2). This proposed 12,000 square foot (ft²) facility, associated parking, utilities, and security are to accommodate the Air Force Element Program Resource Office (AFE PRO) and Defense Courier Service (DCS) mission beddown on Buckley AFB.

Current operations involve trucking cargo between Colorado Springs and Denver several times a week to meet flights. Air Mobility Command (AMC) directed C-130 aircraft fly into Buckley AFB on a weekly basis. The aircraft is usually used to store in-transit cargo while on the ground. When the amount of cargo required to be stored exceeds the capacity of the aircraft, government contractors are utilized to store the excess cargo. The increasing amount of cargo being stored, consolidated, and/or distributed at Buckley AFB, is exceeding the capacity of the government





contractors. Sensitive and/or classified cargo requires the aircraft to be roped off and guarded by Buckley AFB security personnel. The increasing amount of cargo being stored, consolidated, and/or distributed at Buckley AFB, is exceeding the capacity of the government contractors.

1.3 SCOPE OF THE ENVIRONMENTAL ASSESSMENT

1.3.1 Resources to be analyzed in this EA

This EA addresses the potential impacts of the proposed action to land use; socioeconomics; air quality; noise; soils; water resources, including surface water and groundwater; biological resources, including vegetation, wetlands, wildlife, and threatened and endangered species; hazardous materials and wastes; solid waste and pollution prevention; transportation; utilities; and environmental justice.

The draft EA will be made available for public and agency review and comment. After reviewing the analysis in this EA, a decision will be made as to whether to issue a finding of no significant impact (FONSI) or to proceed with the development of an environmental impact statement (EIS) to further analyze the potentially significant impacts resulting from implementation of the proposed action or alternatives.

1.3.2 Resources eliminated from Detailed Analysis

The following environmental issues were initially considered but were determined not to be relevant to the proposed action being considered. By utilizing standard measures, such as avoidance and best management practices (BMPs), the proposed action would not have an impact on these issues. Consequently, they have been eliminated from detailed analysis.

- Floodplains – Executive Order (EO) 11988, “Floodplain Management,” requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. All three sites proposed for the Freight Transfer Facility are located outside of the 100-year floodplain, as depicted in Figure 3-4. Therefore, floodplain management was dismissed as an environmental issue.
- Geology – The Air Force is required to protect significant geologic features. The proposed project and alternative sites would have little to no effect on geology of the area because there are no significant geologic features in the sites under consideration. Therefore, geology was dismissed as an environmental issue.
- Cultural Resources – The National Historic Preservation Act, as amended (16 USC 470 et seq.) and NEPA require the consideration of impacts on cultural resources listed on or eligible for listing on the National Register of Historic Places. The Area of Potential Impact of this project does not involve any known cultural resources. Should any cultural resources be uncovered during construction of any of these facilities, work would stop and the site would be evaluated prior to the continuation of the project. Therefore, historic structures and buildings, and archeological resources were dismissed as an environmental issue.
- Visual Resources – Because the base is zoned as industrial by the City of Aurora and the proposed projects take place within this industrial area, there would be no new impacts to visual or scenic resources. Minor, adverse, and short-term impacts could result from temporary construction activities. Therefore, visual resources were dismissed as an environmental issue.

- **Airspace** – Because the proposed operation of the Freight Transfer Facility would not involve any increase or decrease to flying and/or flying missions, there would be no new impacts to airspace. All proposed sites have been located outside of the airfield set-back requirements. Therefore, airspace was dismissed as an environmental issue.
- **Radon** – Radon is a naturally occurring, odorless, radioactive gas produced by naturally decaying uranium. Federal guidelines determine levels below four picocuries per liter (pCi/L) are low risk. Buckley AFB is located within an area of highest potential for radon gas decay (levels that are above 4 pCi/L). However, the facility will be engineered with controls to reduce radon levels so that there will be no radon exposure. Therefore, radon was dismissed as an environmental issue.
- **Poly-chlorinated biphenyls (PCB)** – The electrical system at Buckley AFB is working toward becoming PCB free. All transformers with PCB concentrations over 500 ppm have been removed, replaced, or retrofitted to below 50 ppm (Buckley AFB, 2000). Therefore, an analysis of PCB's was dismissed as an environmental issue.
- **Socioeconomics and Environmental Justice** – The addition of 11 personnel to man the Freight Transfer Facility would reflect an approximate increase of less than 0.1% to estimated 12,050 personnel currently working on Buckley AFB. The increase to the annual payroll would be very minor, but positive in nature. Construction activities would generate a short-term positive impact to the local economy.

Environmental justice is a concept involving race and ethnicity data and the poverty status of populations within the ROI. On February 11, 1994, President Clinton enacted EO 12898, Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. The purpose of this order is to avoid the disproportionate placement of any adverse environmental or economic impacts from federal policies and actions on minority and low-income populations. Environmental justice analysis is performed to identify potential disproportionately high and adverse impacts from a Proposed Action and to identify alternatives that might mitigate these impacts.

The ROI for Environmental Justice is the area, delineated by zip code, immediately surrounding BAFB. BAFB lies within the 80011 zip code area and is surrounded by the following zip codes: 80010, 80012, 80013, 80017, 80018, 80019, 80045, 80238, 80239, and 80249. (Buckley AFB 2004A)

The median household income exceeded the \$13,423 threshold in all zip codes areas. There is no disproportionately high low-income populations with the ROI. Of the surrounding zip codes, one (80239) had a disproportionately high minority population. The proposed action would not have an adverse impact to the surrounding community.

1.4 APPLICABLE REGULATORY REQUIREMENTS

This EA is documentation of the EIAP, and complies with NEPA, CEQ regulations, and DoD Instruction 4715.9. The EA addresses all applicable federal, state, and local laws and regulations, including but not limited to the Clean Air Act; Endangered Species Act; AFI32-7040, Air Quality Compliance; EO 11990 Protection of Wetlands; Migratory Bird Treaty Act of 1918 (MBTA), EO 12898 Federal Actions to Address Environmental Justice in Minority Population and Low-Income Populations; EO 13045 Protection of Children from Environmental Health Risks and Safety Risks; Resource Conservation and Recovery Act; and Comprehensive

Environmental, Response, Compensation, and Liability Act.

In accordance with the National Pollutant Discharge Elimination System (NPDES) requirements, a site-specific Stormwater Pollution Prevention Plan (SWPPP), including sediment and erosion control measures, would be developed and implemented for construction activities. A Notice of Intent would be filed to obtain coverage under the United States Environmental Protection Agency (USEPA) Stormwater Construction General Permit.

1.5 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

Pursuant to 32 CFR Part 989 implementing the CEQ regulations (40 CFR 1502), this document consists of the following sections:

Acronyms and Abbreviations: provides a list of acronyms and abbreviations used throughout the document.

Section 1 – Introduction: Purpose and Need for the Proposed Action provides background information about the installation; the purpose and need for the proposed action; the scope of the environmental review; applicable regulatory requirements; and a brief description of how the document is organized.

Section 2 – Description of the Proposed Action and Alternatives: provides the selection criteria; a detailed description of the proposed action, other action alternatives, and the No Action Alternative for each of the construction projects; other alternatives that were considered but not carried forward in the evaluation process; and an alternatives comparison table.

Section 3 – Affected Environment and Environmental Consequences: provides a description of the existing conditions of the areas potentially affected by the alternatives identified to implement the proposed action; and an analysis of the direct and indirect project and cumulative impacts to resources from the alternatives.

Section 4 – Cumulative Impacts: provides an analysis of present and reasonably foreseeable projects, and the potential incremental impacts of the proposed actions when considered along with these other planned or reasonably foreseeable projects.

Section 5 – List of Preparers: provides a list of the document preparers and contributors.

Section 6 – Distribution List and Agencies and Individuals Contacted: provides lists of agencies/individuals to whom the EA will be distributed and the agencies/individuals who were contacted for information in the preparation of this document.

Section 7 – References: provides a listing of the references used in preparing this EA.

This section identifies selection criteria, and provides a detailed description of the proposed action, other action alternatives, and the No Action Alternative for the proposed construction of the Freight Transfer Facility. Alternatives that were considered and dismissed are also discussed. In addition, a comparison of how the alternatives meet the selection criteria and a summary of impacts for each alternative are provided at the end of this chapter.

2.1 IDENTIFICATION OF SELECTION CRITERIA

The Buckley AFB General Plan was originally published in November 2002 and has been updated as changes occur. The plan provides an overall blueprint for the transition from an Air National Guard facility to a fully functioning, active-duty AFB with many tenant organizations. The plan advocates grouping similar facilities together, and antiterrorism constraints dictated siting some facilities a specified distance from the fence line.

The following are selection criteria developed to determine if alternatives satisfy the purpose and need for the proposed action. Alternatives were developed based on how effectively they meet the selection criteria for each project.

Freight Transfer Facility

Selection criteria for this project includes the following:

- Space to accommodate a 12,000 ft² facility, associated parking, and security fencing
- Air field access
- Compatibility with existing Buckley AFB General Plan Land Use Guides
- Sited is located outside of Airfield Constraints
- Compatibility with Antenna Height Restrictions
- Compatibility with Munitions Constraints
- Compatibility with Environmental Constraints

2.2 NO ACTION ALTERNATIVE

While the No Action Alternative does not satisfy the purpose and need for the proposed action, it is included in the environmental analysis to provide a baseline for comparison with the proposed action and is analyzed in accordance with CEQ regulations for implementing NEPA.

Under the No Action Alternative, the Facility Transfer Facility would not be built. The execution of the mission of the AFE PRO and DCS would remain unchanged. The No Action Alternative would not support the expanding missions at Buckley AFB and does not meet the project purpose and need.

2.3 DESCRIPTION OF THE PROPOSED ACTION

The USAF proposes to construct a 12,000 ft² single story facility, associated parking, paved access, and security fencing for operation by AFE PRO and DCS and will be comprised of two separate Special Compartmented Information Facilities (SCIFs) to include administrative space for 11 personnel (4 active duty and 7 civil service/contractor). Each SCIF will require access for a 52-foot trailer, a roll-up door with rollerized loading dock, and must be alarmed. Additionally, the facility should have ready access to the flightline and the main base.

Specific facility requirements include the following:

- 12,000 ft² warehouse type facility (2,000 ft² occupied by DCS)
- Concrete masonry units (CMU's) (i.e. cinder block) construction
- Access by both K-loaders and forklifts
- Access by 52-foot tractor trailers
- Requires power, water, sewer (plumbing to include ¾ bath in the administrative area and large industrial sink in open storage area), heating and air conditioning to support standard climate controlled warehouse space and climate controlled office space for 11 personnel (4 Air Force / Civil Service and 7 Contractor)
- Alarm system tied into base security system allowing for appropriate response time
- Paved parking area large enough to contain a Halverson Loader, 25k Loader, 40k Loader, three (3) 18-wheel tractor/trailers, 463L pallet storage area, and 5 government owned cars/vans and 11 – 13 privately owned vehicles, to include maneuvering room for all vehicles.
- 12-foot security fence, with keypad (or similar) access enclosing paved parking areas and facility.
- Two loading docks (one for each SCIF) for access by K-loader from flight line side
- Two truck doors (one for each SCIF) for access by 18-wheel tractor/trailer from base roads
- Administrative area will house a 120 ft² bunk area (with appropriate bathroom and shower facility)

The construction of the above facility and associated parking and security fencing would change approximately three acres of land from its current land-use classification of airfield to that of Industrial land use. Construction of the facility is scheduled for the fourth quarter of 2007, with operation to begin in the third quarter of 2008.

The proposed site will be located on either the east or west side of taxiway H, north of taxiway D (Figure 1-2) in a land use area currently classified as Airfield. The site is currently undeveloped within the airfield fence (Figure 2-1). All utilities are close by with the exception of natural gas which would be brought in from the east along Steamboat Avenue and sewage which would have to be handled by extending existing sewage lines, or utilizing an independent system such as a septic system or self-contained waste treatment system. On the east side of Taxiway H, the existing storm water system is an open ditch with culverts along Steamboat Avenue that flows to the east then under Steamboat Avenue to the north. On the west side of Taxiway H, the existing stormwater system is open ditches and culverts under Steamboat Avenue that flows to the north into Williams Lake. New construction (either on the east or west side of Taxiway H) would include a drainage system connected into the existing systems.



Figure 2-1 General Location of the Proposed Construction Site (Airfield boundary fence on Steamboat Avenue and Taxi way H looking south)

2.4 DESCRIPTION OF OTHER ACTION ALTERNATIVES

Two alternative sites were selected for evaluation in this EA (Figure 1-2). The alternatives are located at different sites across the base that meet the facilities siting criteria detailed in the Buckley AFB General Plan (Buckley AFB 2005) and the selection criteria in Section 2.1 of this EA.

2.4.1 Alternative 1

Alternative 1 (Figure 1-2) is located north of Steamboat Avenue, west of Loveland Street in a land use area currently classified as Outdoor Recreation. The site would be located approximately ¼ mile from a proposed FamCamp, in a currently undeveloped area outside of the airfield fence (Figure 2-2). A controlled airfield access entry point would need to be established. Facility requirements are the same as addressed in Section 2.2 above. As with the proposed site, utilities are close by with the exception of natural gas which would be brought in from the east along Steamboat Avenue and sewage which would have to be handled by extending existing sewage lines, utilizing an independent system such as a septic system or self-contained waste treatment system. The existing storm water system is an open ditch flows to the north into Williams Lake. Stormwater measures would have to be put in place during construction and operation of this facility to prevent sediments and any other contamination (fuels, oils, greases, etc.) from this facility from reaching Williams Lake.



Figure 2-2 General Location of Alternative 1 Construction Site (looking north west from Steamboat Avenue)

The distances that Alternative 1 is from Taxiway D increases the logistics and time required to load and unload aircraft, thus making it a less desirable site than that of the proposed action site.

2.4.2 Alternative 2

Alternative 2 (Figure 1-2) is located north of Silver Creek Street and East of Taxiway W in a land use area currently classified as Airfield. The site is currently undeveloped within the airfield fence (Figure 2-3). Facility requirements are the same as addressed in Section 2.2 above. As with the proposed site, utilities are close to include both natural gas and wastewater. There is an existing storm water system adjacent to the runway that channel storm water run-off to the north.



**Figure 2-3 General Location of Alternative 2 Construction Site
(looking north from Silver Creek Street)**

Locating the facility at the Alternative 2 site would present a restriction upon further expansion of the safety zones associated with the munition storage facilities thus making is a less desirable location than that of the proposed action site.

2.5 ALTERNATIVES CONSIDERED BUT DISMISSED

Other locations for the Freight Transfer Facility were investigated during initial site selection. The location of the Freight Transfer Facility was constrained by the requirements identified in Section 2.1. Existing facilities were evaluated and found to be not available or inadequate based on the mission requirements. Locations off base would not meet the purpose and need for the facility.

2.6 COMPARISON OF ALTERNATIVES

Table 2-1 illustrates the proposed action, other action alternatives, and the No Action Alternative as they relate to the selection criteria presented in Section 2.1.

Table 2-1. Comparison of Alternatives with Selection Criteria

Selection Criteria?	No Action Alternative	Proposed Action	Alternative 1	Alternative 2
Space to accommodate a 12,000 ft ² facility, associated parking, and security fencing	NO	YES	YES	YES
Air field access	NO	YES	YES	YES
Compatible with existing Base General Plan Land Use Guides	NO	YES	NO	YES
Sited outside of Air Field Constraints	NO	YES	YES	YES
Compatible with Antenna Height Restrictions	NO	YES	YES	YES
Compatible with Munitions Constraints	NO	YES	YES	YES
Compatible with Environmental Constraints	NO	YES	NO	YES

3.1 LAND USE

This section describes existing land use on the base and presents information pertaining to proposed projects and their impact or change, if any, on land use.

3.1.1 Affected Environment

Buckley AFB occupies approximately 3,283 acres (1,328 hectares) adjacent to the City of Aurora, Arapahoe County, Colorado, within the Denver metropolitan area. Developed areas, including residential development and the Airport Boulevard Gateway Area (a growing business hub), border the base to the west and northwest. Light residential land use borders the base to the north. Land uses bordering the base to the east include agricultural and residential. Residential areas border the base on the southwest side. The East Toll Gate Creek 100-Year Floodplain borders the base to the southwest and provides a buffer between the developed areas and the installation boundary. A Regional Park has been built and an Open Space designation are proposed for areas immediately south of the installation (Buckley AFB, 2005).

Areas within Buckley AFB are for the most part industrial. Generally, land use on the base currently includes National Guard and Reserve facilities to the east of Aspen Street, and active-duty facilities to the west (Buckley AFB, 2005). Land uses within Buckley AFB are primarily divided into fourteen categories (Administrative, Aircraft Operations and Maintenance, Airfield, Airfield Pavements, Community Commercial, Community Service, Housing-Accompanied, Housing-Unaccompanied, Industrial, Medical, Mission Operations and Maintenance, Open Space, Outdoor Recreation, and Water). The land use categories were developed to prevent incompatible siting of facilities and/or operations (Figure 3-1).

No Action

Existing land uses would continue until they are altered or replaced by other land uses in response to base expansion.

Proposed Action

Under the Proposed Action, the Freight Transfer Facility would be located on either the east or west side of taxiway H, north of taxiway D (Figure 1-2, Option 1) in a land use area currently classified as Airfield. The site is currently undeveloped within the airfield fence (Figure 2-1).

Alternative 1

Under Alternative 1, the Freight Transfer Facility would be located north of Steamboat Avenue, west of Loveland Street in a land use area currently classified as Outdoor Recreation. The site is currently undeveloped outside of the airfield fence (Figure 2-2).

Alternative 2

Under Alternative 2, the Freight Transfer Facility would be located north of Silver Creek Street and East of Taxiway W in a land use area currently classified as Airfield. The site is currently undeveloped within the airfield fence (Figure 2-3).

3.1.2 Impacts

The primary issues and concerns related to land use include the ability of Buckley AFB to continue to perform its mission while maintaining the viability of the land uses at and adjacent to the base. Also of concern are the health, safety, and welfare of persons using land adjacent to

Buckley AFB. The region of influence (ROI) considered for land use was limited to the Buckley AFB boundaries.

Potential impacts to land use from the Proposed Action or action alternatives would include:

- land use changes on base that would conflict with community land use plans or zoning,
- land use conflicts on base that are considered incompatible with the Buckley AFB General Plan, and
- land use changes on base that would impact communities (i.e. residential, business) that are located off base, adjacent to Buckley AFB.

Since activities under the Proposed Action and action alternatives would occur within base boundaries, no off-base impacts to land use are expected to occur as a result of the Proposed Action or action alternatives.

No Action

No direct or indirect impacts to land use types as a result of the No Action Alternative are anticipated.

Proposed Action

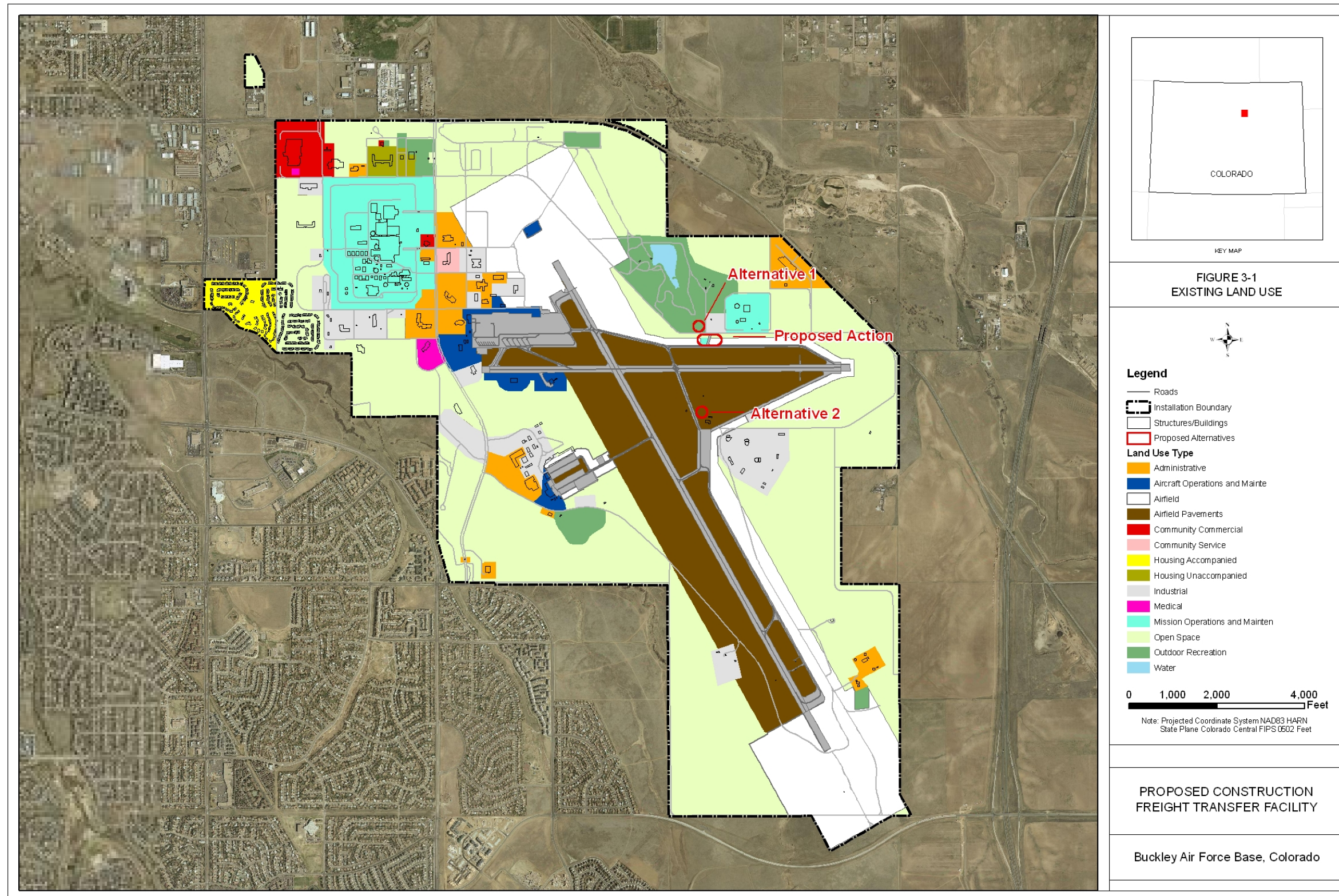
Direct impacts of the Proposed Action would include the conversion of approximately 3.0 acres of Airfield Space to an industrial use (Figure 3-2) (Buckley AFB, 2005). However, implementing the Proposed Action would be in conformance with the Buckley AFB General Plan and the Vision 2020 Brochure (460 CES/CEC, 2006). Impacts during construction and operation are expected to be negligible, long-term adverse as a result of the Proposed Action.

Alternative 1

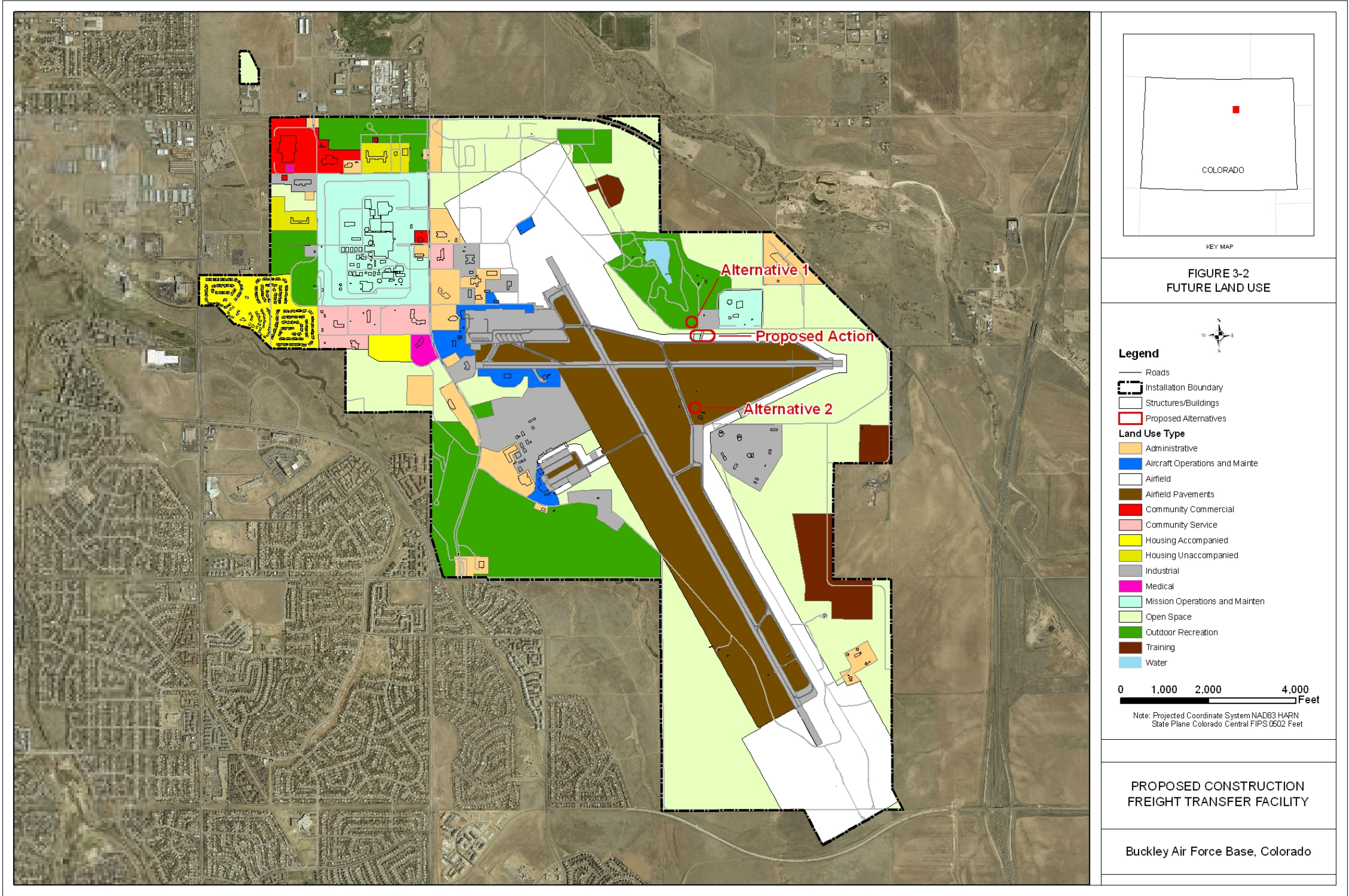
Direct impacts of Alternative 1 would include the conversion of approximately 3.0 acres of Outdoor Recreation designated land use to Industrial land use (Figure 3-2) (Buckley AFB, 2005). Implementing Alternative 1 would not be in conformance with the Buckley AFB General Plan as the area has future planned uses for Outdoor Recreational and Alternative 1 is designated as Industrial. Indirect impacts to the proposed FamCamp to the northwest of the site would be negligible. During construction and operation, there would be a minor long-term adverse impact in reducing the acreage designated as Outdoor Recreation.

Alternative 2

Alternative 2 would have no direct impacts as the area is currently classified as Industrial. Future development of this area would comply with the Buckley AFB General Plan. Impacts during construction and operation are expected to be negligible, long-term adverse.



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3.2 AIR QUALITY

3.2.1 Affected Environment

Buckley AFB is located in Arapahoe County, Colorado, within the Metropolitan Denver Air Quality Control Region (AQCR). Given the regional nature of air quality, the ROI for this resource is the entire Denver AQCR. The Denver AQCR is currently designated attainment/maintenance for carbon monoxide (CO), the 1-hour ozone standard, and particulate matter with a diameter of 10 micrometers or less (PM10) (Colorado Air Quality Control Commission [CAQCC], 2001a, 2001b, 2001c; CDPHE, 2004). The State of Colorado has no standard for particulate matter with a diameter of 2.5 micrometers or less (PM2.5). The Denver metropolitan area exceeded both the 1-hour and the 8-hour ozone standards during the summer of 2003. The region has entered into an Ozone Early Action Compact with USEPA and has committed to an extensive ozone modeling effort and early implementation of control measures as needed to ensure attainment of the 8-hour ozone standard by 2007 (CAQCC, 2004).

Buckley AFB is a minor source of CO, volatile organic compounds (VOC), and PM10 under the Prevention of Significant Deterioration (PSD) provisions with a potential to emit less than 250 tons per year of these pollutants. Buckley AFB is a PSD synthetic minor source of NO_x and SO₂ because the base accepted permit limits that establish the potential to emit these pollutants at less than 250 tons per year (Jensen, 2002). Buckley AFB's Title V Operating Permit Number 950PAR118 was originally issued on 28 August 1997, renewed on 1 July 2002, modified 1 November 2006, and expires on 30 June 2007 (CDPHE, 2002).

The 2005 Air Emissions Inventory summary for Buckley AFB is presented in Table 3-1.

Table 3-1. Calendar Year 2005 Summary of Basewide Air Emissions Inventory Criteria Pollutants

	Point Source Total (tpy)	Fugitive Source Total (tpy)	Stationary Source Permit Limits (tpy)	Total Emissions (tpy)
NO _x	52.00	0.00	249.9	52.00
SO _x	1.5	0.00	249.9	1.50
VOCs	10.60	15.79	99.9	26.40
CO	21.80	0.00	99.9	21.80
PM10	3.30	2.78	99.9	6.10
Hazardous Air Pollutants	0.85	4.15	NA	5.00

tpy = tons per year

3.2.2 Impacts

Impacts to air quality were evaluated with respect to the PSD and general conformity regulations (40 CFR Part 51 and 40 CFR Part 93 Subpart B respectively) and Buckley AFB's Title V Permit. The general conformity regulations apply to any federal action that takes place within an area designated as non-attainment or maintenance for a criteria pollutant.

The construction and operation of the Freight Transfer Facility would affect air quality in three ways; (1) the construction and demolition activities would produce fugitive dust and pollutants from vehicle and heavy equipment exhaust; (2) the operation of new buildings and facilities would increase emissions from furnaces, hot water heaters and/or backup generators and tanks

used to store fuels for these sources; and (3) increased traffic associated with use of new facilities would cause automobile emissions. These effects would be considered direct, as they would occur at the same time and place (i.e. point of emission from vehicle and equipment exhaust; stacks and/or vents for furnaces, and hot water heaters).

Emissions associated with the construction and operation of the Freight Transfer Facility were estimated using the USAF Air Conformity Applicability Model (ACAM) (Version 4.0.3). Fugitive dust emissions are included in PM10 values. ACAM worksheets are located in Appendix A.

Emission estimates provided by ACAM are summarized in Table 3-2 (construction) and Table 3-3 (operation).

Table 3-2. Freight Transfer Facility Construction Air Emissions (3rd Quarter 2007, 1st and 2nd Quarter 2008)

Criteria Pollutants	Denver AQCR Total Emissions ¹ (tpy)	Construction Emissions (tpy)	Percent of AQCR Emissions	Regionally Significant ² (Yes/No)	Conformity Rule DeMinimus Threshold (tpy)	Exceeds Threshold ² (Yes/No)
NO _x	112,785	2.26	0.002	No	100	No
SO ₂	69,350	0.27	0.00039	N/A ³	N/A ³	N/A ³
VOCs	167,900	0.51	0.0003	No	100	No
CO	678,170	6.70	0.00099	No	100	No
PM10	32,156	0.57	0.0018	No	100	No

¹Source: (CAQCC, 2001a, 2001b, 2001c)

²Source: 40 CFR 93.153(b) (1)

³There is no regionally significant or applicable thresholds for SO₂ because the Metropolitan Denver AQCR is in attainment for this pollutant.
tpy = tons per year

Table 3-3. Freight Transfer Facility Operation Air Emissions (annual operation)

Criteria Pollutants	Denver AQCR Total Emissions ¹ (tpy)	Operation Emissions (tpy)	Percent of AQCR Emissions	Regionally Significant ² (Yes/No)	Conformity Rule DeMinus Threshold (tpy)	Exceeds Threshold ² (Yes/No)
NO _x	112,785	0.12	0.00011	No	100	No
SO ₂	69,350	0.00	0.00	N/A ³	N/A ³	N/A ³
VOCs	167,900	0.06	0.00004	No	100	No
CO	678,170	1.27	0.00019	No	100	No
PM10	32,156	0.01	0.00003	No	100	No

¹Source: (CAQCC, 2001a, 2001b, 2001c)

²Source: 40 CFR 93.153(b) (1)

³There is no regionally significant or applicable thresholds for SO₂ because the Metropolitan Denver AQCR is in attainment for this pollutant.

No Action

There would be no additional impact by selecting the No Action Alternative since no construction activities would be undertaken or new facility operations would result. Current operations are already considered in the 2005 air emissions inventory and emissions calculations.

Proposed Action

The estimated values for CO, VOC, NO_x, SO_x, and PM₁₀ were determined to be less than the USEPA de minimus threshold values and less than 10 percent of the Denver AQCR emission inventory. Therefore, a conformity determination is not required. Impacts associated with the construction of the facility would be minor, short-term, direct adverse. Operation of the facility would generate negligible, long-term, direct adverse impacts.

Alternative 1

Alternative 1, which would entail constructing and operating the Freight Transfer Facility at an alternative location on base, would result in virtually the same air quality and emissions impacts as the Proposed Action. Therefore, a conformity determination is not required. Impacts associated with the construction of the facility would be minor, short-term, direct adverse. Operation of the facility would generate negligible, long-term, direct adverse impacts.

Alternative 2

Alternative 2, which would entail constructing and operating the Freight Transfer Facility at an alternative location on base, would result in virtually the same air quality and emissions impacts as the Proposed Action. Therefore, a conformity determination is not required. Impacts associated with the construction of the facility would be minor, short-term, direct adverse. Operation of the facility would generate negligible, long-term, direct adverse impacts.

3.3 NOISE

Noise is defined as unwanted sound. Human response to noise is subjective and can vary greatly from person to person. Factors that can influence an individual's response to noise include the magnitude of the noise as a function of frequency and time pattern. The amount of background noise present before an intruding noise occurs, and the nature of the work or activity (e.g. sleeping) that the noise affects, can also influence a person's level of annoyance.

The unit used to measure the loudness of noise is the decibel (dB). Most community noise standards utilize A-weighted decibels as the measure of noise, as it provides a high degree of correlation with human annoyance and health effects. A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to functioning of the human ear.

The Air Installation Compatible Use Zone (AICUZ) program was initially established by DoD in response to the Noise Control Act of 1972 to promote an environment free from noise that jeopardizes public health or welfare. The noise zones and the accident potential zones together form the AICUZ for an air installation. AICUZ also serves to protect Air Force airfields from encroachment and incompatible land development. The AICUZ will be referenced throughout this section.

3.3.1 Affected Environment

The DoD uses the NOISEMAP computerized day-night average A-weighted Sound Level (DNL) modeling program to produce contours showing noise levels generated by aircraft operations

(Figure 3-3). Existing noise conditions on Buckley AFB are predominantly influenced by the operational activities of aircraft and by the test run-ups of aircraft engines. Figure 3-3 can be referenced throughout the following sections for noise contours on base. Daily activities range from 65 to 80 dB for a typical busy day at Buckley AFB.

No Action

Noise levels would remain unchanged as a result of the No Action Alternative.

Proposed Action

The Proposed Action site would be located on the east side of taxiway H, north of taxiway D in an AICUZ of 70-75 dB. Occupants and visitors of the facility would not encounter average dB levels over 75 dB (Buckley AFB, 2005).

Alternative 1

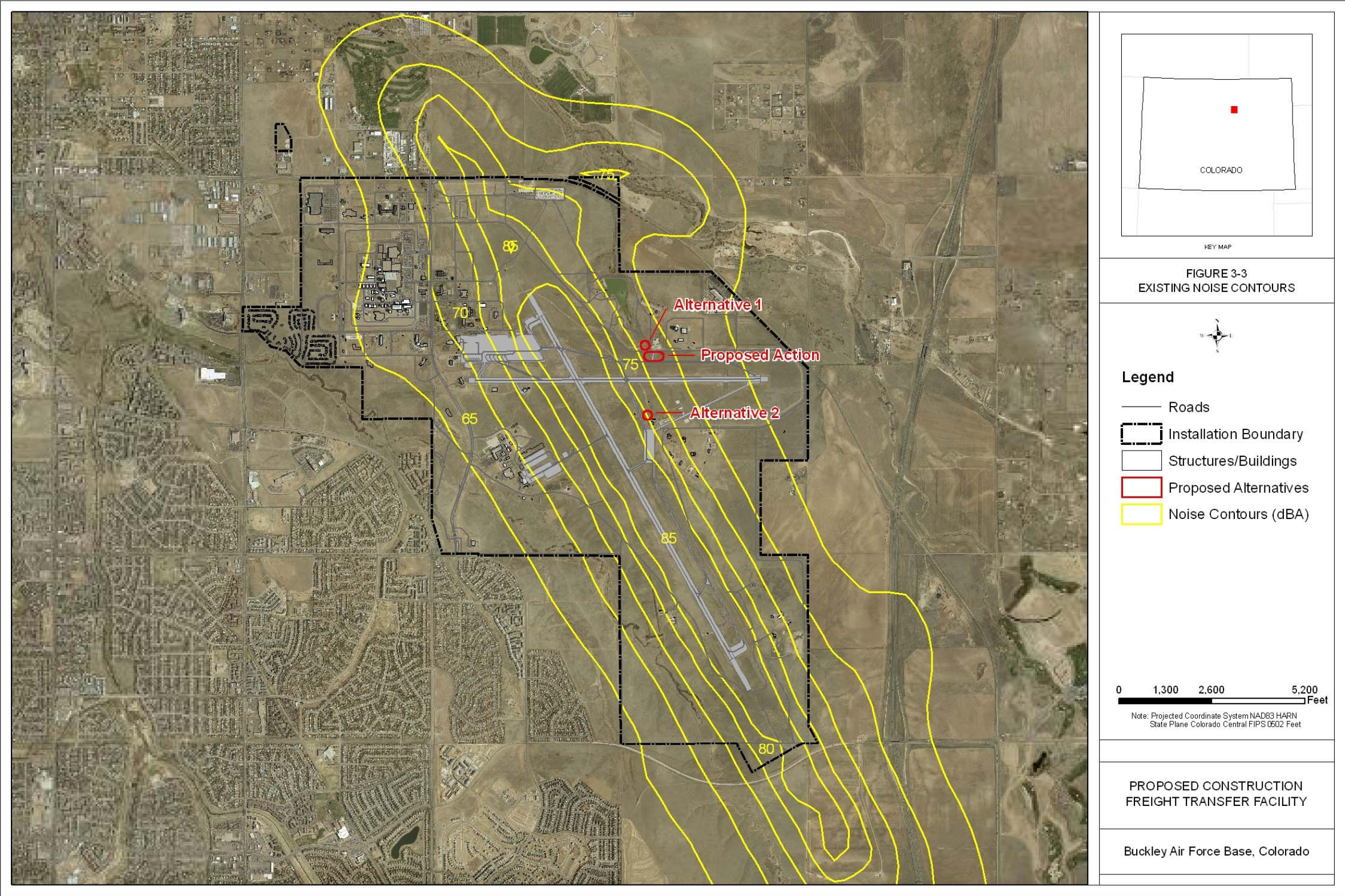
The Alternative 1 location for the Facility Transfer Facility would be located north of Steamboat Avenue, west of Loveland Street in an AICUZ of 70 to 75 dB (Buckley AFB, 2005). Occupants and visitors of the facility would not encounter average dB levels over 75.

Alternative 2

The Alternative 2 location for the Freight Transfer Facility would be located north of Silver Creek Street and East of Taxiway W in an AICUZ of 75 to 80 dB (Buckley AFB, 2005). Occupants and visitors of the facility would not encounter average dB levels over 80.

3.3.2 Impacts

Noise levels below DNL 65 dB are not considered constraints to development. However, once the noise level meets or exceeds the 65 dB level, different functions, such as residential, administrative, commercial, and recreational, have different thresholds at which Noise Level Reduction (NLR) measures are recommended for facility design or at which no construction is permitted. The ROI considered for noise includes the noise contour containing the proposed site and immediately adjacent areas (Figure 3-3). Impacts would be considered adverse if there are long-term increases in the number of people highly annoyed by the noise environment, noise-associated adverse health effects to individuals, or unacceptable increases to the noise environment for sensitive receptors. A sensitive receptor is any person or group of persons in an environment where low noise levels are expected, such as schools, day care centers, hospitals, and nursing homes.



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This impact section analyzes the AICUZ and noise that occupants and visitors would encounter from the surrounding site location and area.

No Action

Under the No Action Alternative, noise would remain at current levels. Current operations would not change. No impact is anticipated.

Proposed Action

Noise impacts from the construction and operation of the Freight Transfer Facility would primarily be from construction activities. Noise created from construction activities could have short-term on- and off-site effects. Based on previous calculations from similar type construction activities, the highest calculated cumulative energy equivalent sound levels from construction activities are estimated to be 85 dB at 50 ft (15.2 m) from the center of the project site (Buckley AFB, 2004a). Noise levels at 50 ft (15.2 m) for some equipment used during construction and demolition activities are 80 dB for bulldozers, 83 dB for cranes, 85 dB for backhoes, and 91dB for trucks. The impacts from noise would vary according to the activity occurring on any given day, and impacts would cease when construction is completed. Nearby adjacent receptors may experience noise impacts from certain construction sites. However, noise impacts from the construction and operation of the Freight Transfer Facility would not greatly increase ambient levels. The effects of noise during construction of the Freight Transfer Facility are expected to be short term and moderate and would be consistent with acceptable noise levels on Buckley AFB (Buckley AFB, 2004a). These noise impacts could be reduced through the use of equipment exhaust mufflers and restriction of construction activity to normal working hours (between 7:00 AM and 5:00 PM. No increase in ambient noise levels is anticipated during the operation of the facility.

The AICUZ study indicates that the proposed site is noise rated between 70 - 75 dB, a range that is compliant with USAF regulations for this type of function given proper design of facilities. This facility would fall under the Design Guidelines for "Zone 7" in the Buckley Facilities Excellence Plan. Certain minimum exterior materials and finishes are required.

The impacts from noise generated during the construction and operation of the Freight Transfer Facility would vary according to the activity occurring on any given day, and impacts would cease when construction is completed. Nearby adjacent receptors may experience noise impacts from certain construction activities. There are no sensitive receptors (e.g. schools, hospitals) immediately adjacent to the Proposed Action location. However, noise impacts during construction of the Freight Transfer Facility are expected to be short term, moderate, and adverse, and would discontinue after site grading and construction are complete. No increase in ambient noise levels is anticipated during the operation of the facility. Therefore, noise impacts from the Proposed Action location are expected to be moderate, short term, and adverse during construction, and negligible, long term, adverse during operation.

Alternative 1

The AICUZ study indicates that the proposed site is noise rated between 70 - 75 dB, a range that is compliant with USAF regulations for this type of function given proper design of facilities. This facility would fall under the Design Guidelines for "Zone 7" in the Buckley Facilities Excellence Plan. Certain minimum exterior materials and finishes are required. There are no other sensitive receptors (e.g. schools, hospitals) immediately adjacent to this site location.

Noise impacts associated with the construction and operation would be the same as identified for the proposed action. Short term, moderate, and adverse impacts may be experienced at the proposed FamCamp located to the north west of this site during the construction activities.

Alternative 2

The AICUZ study indicates that the proposed site is noise rated between 75 - 80 dB, a range that is compliant with USAF regulations for this type of function given proper design of facilities. This facility would fall under the Design Guidelines for "Zone 7" in the Buckley Facilities Excellence Plan. Certain minimum exterior materials and finishes are required. There are no sensitive receptors (e.g. schools, hospitals) immediately adjacent to this site location.

Noise impacts associated with the construction and operation would be the same as identified for the proposed action.

3.4 SOILS

3.4.1 Affected Environment

Buckley AFB is located within the Denver Basin on the Colorado Piedmont section of the Great Plains. This section is between the high plains in the east and the Front Range of the Rocky Mountains to the west. The major soil-mapping units present on Buckley AFB include the Fondis-Weld, Alluvial Land-Nunn, and Renohill-Buick-Little associations (Buckley AFB, 2004). Other areas on base have been identified as gravel pits, rock outcrop complexes, sandy alluvial land, and terrace escarpments.

The Fondis-Weld association mapping unit, comprised of the Fondis and Weld soil series, covers the most surface area at Buckley AFB. This association consists of deep loamy soils that formed mainly in silty material deposited by the wind (loess). The Fondis soils are gently sloping (1 to 5 percent slope), well-drained, fertile upland soils with a high water-holding capacity (0.25 inch per inch of soil) and moderately slow permeability (<0.63 inch per hour), and are susceptible to wind and water erosion. The Weld soil series consists of deep, well-drained, level to gently sloping (0 to 3 percent slope) soils that occur mainly in uplands. The Weld soils have a moderate rate of water intake and a high available water-holding capacity (0.20 to 0.25 inch per inch of soil). The most common soils in the Buckley AFB area are the Fondis silt loam and the Fondis-Colby silt loam (Buckley AFB, 2004). The sites described under the Proposed Action and action alternatives for the Freight Transfer Facility are located within the Fondis soil association.

Conditions that have been identified that may require standard BMPs during construction include potential for erosion and expansive soils. Expansive soils are present at Buckley AFB. The altered volcanic ash layers that are common in most underlying bedrock units are composed primarily of swelling clay minerals. Soils that develop from and upon them tend to have elevated swell potential as well. Expansive soils and bedrock can repeatedly swell when wet and contract when dry, damaging man-made structures. However, engineering measures, such as installation of deep foundation systems, can decrease potential impacts from expansive soils.

3.4.2 Impacts

No Action

Under the No Action Alternative, no impacts to soils would occur because no grading or other earth-disturbing activities would occur.

Proposed Action

Under the Proposed Action, short-term direct effects on soils would be expected from construction activities such as grading, excavating, and recontouring of the soil. Coverage under the NPDES General Permit for Storm Water Discharges from Construction Activities, site-specific Sediment and Erosion Control Plans, and SWPPPs are required and would be prepared to minimize potential erosion and sedimentation during the construction phase. Soil removed during the project would be used as fill material or stock piled for use at other locations on Buckley AFB. Implementation of BMPs during construction activities would limit adverse indirect effects during construction. Fugitive dust generated during construction activities would be minimized by watering and soil stockpiling, thereby reducing the total amount of soil exposed to negligible levels.

Under the Proposed Alternative, approximately 3.0 acres of soil classified as Fondis and Buick loam would be permanently disturbed as a result of excavation for the below-ground floor or establishment of impervious surfaces. There would be no residual construction effects on sensitive soil types. Minor, short term, adverse impacts on soil resources are expected during construction activities due to soil disturbance and relocation. Negligible, long term, adverse impacts on soil resources are expected during the operation of the facility.

Alternative 1

Impacts to soil at the Freight Transfer Facility Alternative 1 location would be similar to those described in the Proposed Action.

Alternative 2

Impacts to soil at the Freight Transfer Facility Alternative 2 location would be similar to those described in the Proposed Action.

3.5 WATER RESOURCES**3.5.1 Affected Environment***Surface Water*

The South Platte River, located approximately 15 miles (27.8 km) northwest of Buckley AFB, is the primary surface water drainage in the region. Several smaller drainages located within or adjacent to Buckley AFB include Murphy Creek that feeds into Sand Creek, and East Toll Gate Creek which feeds into Toll Gate Creek which feeds into Sand Creek. Sand Creek feeds into the South Platte River. Within and adjacent to Buckley AFB, Murphy Creek, East Toll Gate Creek, and Sand Creek, and their unnamed tributaries, are all intermittent. The most prominent surface water feature is Williams Lake, a reservoir located in the northeastern section of the installation (Buckley AFB, 2004).

Groundwater

Buckley AFB is located within a groundwater basin known as the Denver Basin. There are four major bedrock aquifers that underlie Buckley AFB within the Denver Basin: the Denver, Upper Arapahoe, Lower Arapahoe, and Laramie-Fox Hills aquifers. These aquifers are separated by a bed of shale with low permeability and are located in zones of sandstones and siltstones (U.S.G.S., 1995).

Surficial aquifers at Buckley AFB are associated with present and ancestral surficial stream and river valleys. The aquifer systems are the result of alluvial deposition from erosion of upland bedrock areas. The alluvial aquifer identified on Buckley AFB is associated with Toll Gate and Sand creeks and consists of primarily coarse-grained materials. Groundwater is recharged to this aquifer through direct infiltration of precipitation and irrigation water and by lateral and upward seepage of groundwater. Groundwater is discharged from the alluvial aquifer through seepage to streams, evapotranspiration, downward seepage into underlying bedrock aquifers, and extraction via pumping wells. Groundwater flow in these surficial aquifers is generally toward the north-northwest along creek beds, toward the South Platte River (Buckley AFB, 2004).

Stormwater

In general, drainage flows in a northwest direction. Buckley AFB has extensive natural and manmade surface drainage as well as underground stormwater drainage lines. All drainage from the northern section of Buckley AFB discharges into Murphy Creek and Sand Creek to the north and east of the base; drainage from the southern and western section of the base discharges into East Toll Gate Creek (Buckley AFB, 2004). During most storm events, runoff infiltrates, and only when there is sufficient volume does stormwater runoff result in a flow off of Buckley AFB.

On Buckley AFB, stormwater regulations are under the purview of the United States Environmental Protection Agency (USEPA), as the agency responsible for regulatory enforcement on federal facilities located in the State of Colorado. The USEPA's stormwater regulations consist of three permit programs, namely the General Permit for Stormwater Discharges from Construction Activities (aka Construction General Permit or CGP), the NPDES Stormwater Multi-Sector General Permit for Industrial Activities (MSGP), and the General Permit for Stormwater Discharges from Federal Facility Small Municipal Separate Storm Sewer Systems in Colorado (MS4). Buckley AFB holds active permits under all three of these USEPA stormwater programs.

The objective of the CGP is to prevent pollutants on construction sites (e.g., sediment, POLs) from being transported off site by stormwater runoff. The CGP is applicable to projects that disturb of an area one (1) acre or more in size. The CGP requires that an NOI be obtained by both the contractor doing the construction work and the owner/operator responsible for directing the work, per the definitions in the CGP. Although the 460th SW is not a designated responsible organization under the CGP for many of the construction projects, the 460 SW maintains overall responsibility for construction project compliance under the MS4 permit, as described below. In addition to applying for an NOI, the CGP requires each project to develop and implement a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP includes erosion and sediment controls, controls on waste at the site, self-inspection/monitoring, and reporting efforts. The controls are commonly referred to as best management practices (BMPs).

The purpose of the MS4 program is to provide an overall management and compliance program for the owners and operators of stormwater conveyance systems. The objective of the program is to preserve and protect surface water resources from common everyday sources of pollution in stormwater runoff and from construction activities. A MS4 includes systems owned or operated by various governmental entities (e.g., military facilities, prisons, or department of transportation). A "system" means the network of interconnected ditches, culverts, gutters, curbs, catch basins, buried sewer pipes, etc. that carries runoff from precipitation events to the

nearest surface drainage creek or stream. The 460 SW is the owner and operator of such a system on Buckley AFB (permit tracking number COR04208f). Requirements of the MS4 program include preparation and implementation of a Stormwater Management Plan (SWMP). The SWMP identifies BMPs that address each of six minimum control measures, which include construction site stormwater runoff control and post-construction stormwater management in new development/redevelopment.

In addition to the USEPA permit program requirements, the Air Force mandates compliance with Engineering Technical Letter 03-01: Stormwater Construction Standards.

The proposed Freight Transfer Facility would consist of an approximately 12,000 ft² warehouse with an adjacent parking area for approximately 13 privately owned vehicles, 3 18-wheel tractor/trailers, and various loaders. Therefore, an increase of impervious surfaces for this complex would be approximately 2.0 acres. This number would be the same for the Proposed Action site and Alternative site.

Proposed Action

Stormwater that collects on the east side of Taxiway H at the proposed site of the Freight Transfer Facility is transported to an open drainage ditch, which flows to the east, then north-north east. On the west side of Taxiway H at the proposed site, stormwater collects in an open drainage ditch, which flows to the north, then into Williams lake. The development of impermeable surfaces at this location would increase the volume of storm drainage generated on site that would have to be managed prior to its outfall off site.

Alternative 1

The Freight Transfer Facility Alternative 1 site slopes minimally to the northwest. Presently, there are no drainage improvements on or adjacent to the project site. Development of impermeable surfaces at this location would increase the volume of storm drainage generated on site that would have to be managed prior to its outfall off site.

Alternative 2

Alternative 2 site slopes minimally to the west. The proposed site does not contain any drainage improvements. One of the primary storm drainages is located along the east side of Taxiway W to the west with water flowing to the north. However, the development of impermeable surfaces at this location would increase the volume of storm drainage generated on site that would have to be managed prior to its outfall.

3.5.2 Impacts

Depth to groundwater is greater than 20 ft (6.1m) below ground surface. Therefore, it is not expected that groundwater would be impacted during construction activities under the Proposed Action, No Action Alternative, or action alternatives and will not be further discussed.

Potential impacts would include disruption of natural water flows, contamination entering stormwater discharge, or heavy sediment loading from construction activities. Preparing and implementing a SWPPP can minimize adverse impacts. These plans provide construction and post-construction BMPs intended to control and manage the loading of sediment and other pollutants to levels that would minimize degradation of downstream water quality. Man-made engineered drains, culverts and above and underground piping systems will also assist in reducing potential impacts.

Because the proposed construction sites are distributed on the east side the facility, potential impacts to the streams that receive stormwater runoff from Buckley AFB to the east could result from the Proposed Action alternatives. The increase in stormwater volume would result from the reduction of pervious surfaces on the base as a consequence of building, parking lot, and side walk construction.

Areas of impervious surface would be increased with completion of construction of the facilities and associated structures. Utilizing similar type facility designs, an impervious area of approximately 2 acres was calculated. This estimate may include some areas that may be landscaped, but are included until final design for landscaping has been completed.

There are a total of approximately 3,200 acres of drainage area at Buckley AFB, of which 525 acres (212.5 hectares), or 16.4 percent, are impervious surface. The Proposed Actions would increase the impervious surfaces at Buckley AFB by approximately 2.0 acres. This would increase the total impervious surface at the base to a total of 527 acres, an increase of 0.4 percent. Assuming an annual precipitation rate of 16.3 inches per year and no losses due to evaporation, the anticipated increase in stormwater due to the Proposed Action would be approximately 885 thousand gallons per year (Buckley AFB 2004a). The exact direction of increased runoff is not currently known (per 40 CFR 1502.22) and would need to be assessed in further detail through site-specific drainage engineering plans that would be developed for this construction project.

Post-construction BMPs can be implemented to reduce runoff peak flows from the increased impervious surfaces, including:

- Minimizing contiguous areas of impervious surfaces by using landscaping, grass buffer strips, or grass-lined swales and directing runoff from a site to these features

Construction BMPs can also be implemented for each Proposed Action or action alternative to decrease sedimentation by erosion. Common BMPs for construction and demolition activities would be followed to minimize erosion. Preventive BMPs may include the following:

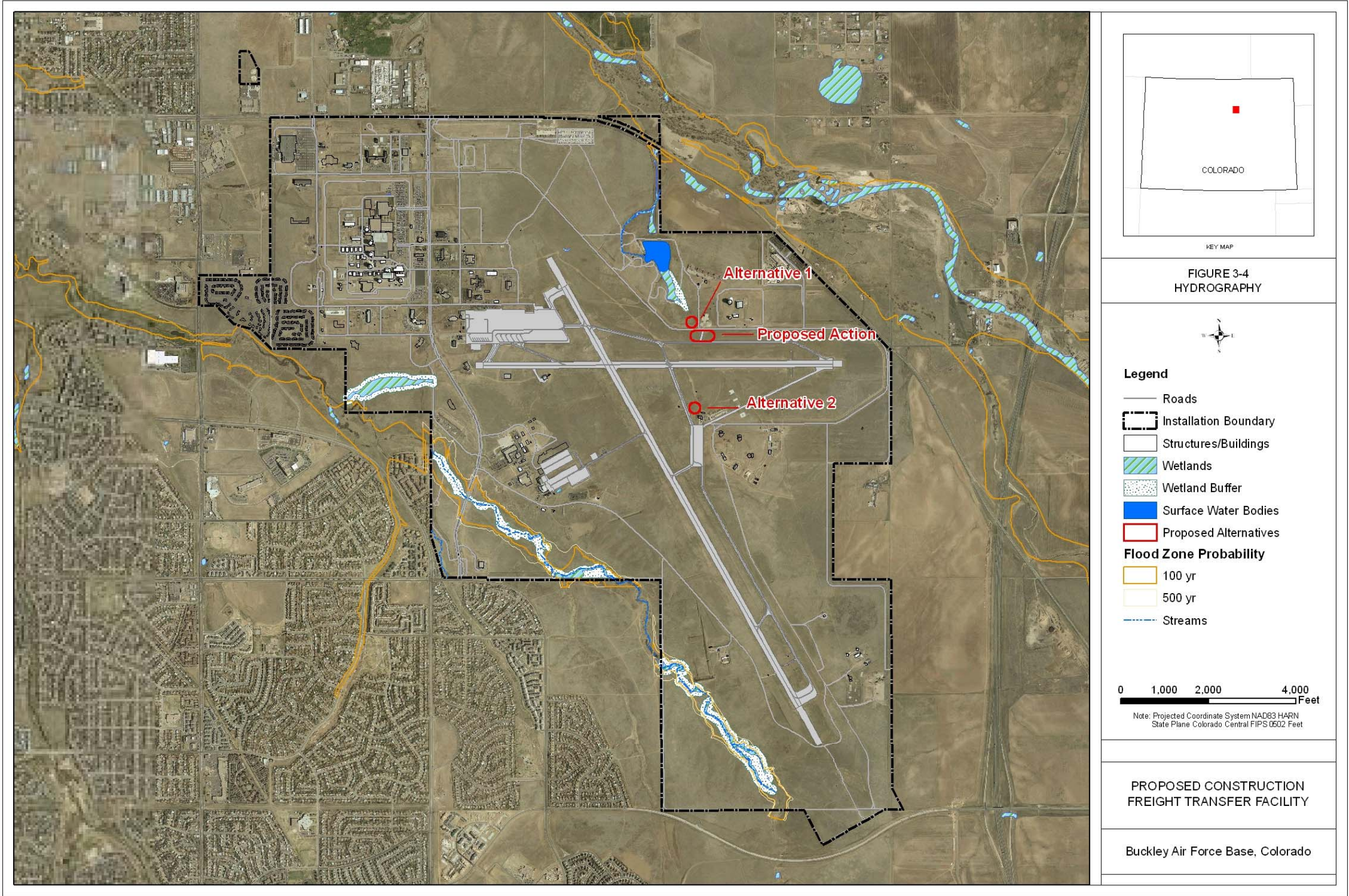
- Limit stockpiling of materials onsite
- Manage stockpiled materials to minimize the time between delivery and use
- Cover stockpiled materials with tarps
- Install snow or silt fences around material stockpiles, stormwater drainage routes, culverts, and drains
- Install hay or fabric filters, netting, and mulching around material stockpiles, stormwater drainage routes, culverts, and drains

No Action

The No Action Alternative would have no impacts on water resources. Current operations occur on existing impermeable surfaces that are connected to the existing storm drainage system. No additional increase to impermeable would be required.

Proposed Action

Construction of the Freight Transfer Facility under the Proposed Action would increase impermeable surfaces by approximately 2 acres. There are both natural and man-made surface



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drainage, that would convey increased stormwater volumes created from increased impervious surfaces. In addition, stormwater drainage systems associated with the building construction (whether on the east or west side of Taxiway H) would be constructed in order to handle the increased runoff and divert it into the existing surface drainage system. Through the use of BMP's during construction activities, minor, short term, adverse impacts to surface water is expected. The increased amount of impervious surface is expected to have negligible, long-term, adverse impacts to surface water at Buckley AFB.

Alternative 1

Construction of the Freight Transfer Facility at the Alternative 1 site location would increase impermeable surfaces by approximately 2 acres. Man-made surface drainage features in the site area would convey increased stormwater volumes created from increased impervious surfaces to the north west draining into Williams Lake. Stormwater drainage systems associated with the building construction would be designed and constructed to handle the increased runoff and to ensure that they do not flow into Williams Lake. Through the use of BMP's during construction activities, minor, short term, adverse impacts to surface water is expected. The increased amount of impervious surface is expected to have negligible, long-term, adverse impacts to surface water at Buckley AFB.

Alternative 2

Construction of the Freight Transfer Facility at the Alternative 2 site location would increase impermeable surfaces by approximately 2 acres. The man-made surface drainage currently in the site area conveys drainage to the north into Williams Lake. Stormwater drainage systems associated with the building construction and modification to existing systems would be designed and constructed to handle the increased runoff and divert it from flowing into Williams Lake. Through the use of BMP's during construction activities, minor, short term, adverse impacts to surface water is expected. The increased amount of impervious surface is expected to have negligible, long-term, adverse impacts to surface water at Buckley AFB.

3.6 BIOLOGICAL RESOURCES

This section describes native and non-native wildlife, wetlands, and vegetation, as well as threatened, endangered, and other sensitive species known or likely to occur at Buckley AFB. This analysis is based on site visits conducted in July 2006, as well as literature and previous surveys conducted at Buckley AFB.

Impacts were assessed by comparison of the footprint of the facility for the proposed project site and the alternative sites to the biological resources described under the Affected Environment section for each resource. Impacts are described by intensity (minor/moderate), timing (construction vs. operation), mode of action (direct/indirect), and duration of impact (short-term/long-term), where applicable. The best management practices are based on standard methods and actions recommended by wildlife management agencies and organizations. In order to quantify impacts resulting from the replacement of native habitat with a proposed facility, it was assumed that the actual construction area would be four times greater than the proposed building footprint to accommodate parking lots, access roads, landscaped areas, and equipment staging.

3.6.1 Vegetation

This section describes the affected environment and impacts to vegetation resources for the Proposed Action and the alternatives.

3.6.1.1 Affected Environment

Buckley AFB is located in the Great Plains-Palouse Dry Steppe Province Ecoregion (Bailey, 1995), an ecoregion also classified as shortgrass prairie (Buckley AFB, 2004). Based on vegetation surveys conducted in 2001 for the Integrated Natural Resource Management Plan (Buckley AFB, 2004), four vegetation types occurring at Buckley AFB were identified, including:

- Midgrass prairie comprised of blue grama, western wheatgrass, crested wheatgrass
- Riparian corridors consisting of bottomland meadows or cottonwood/willow habitat
- Weedy/disturbed areas
- Landscaped areas, including turfgrass

Midgrass prairie is dominated by native grass species such as blue grama (*Bouteloua sp.*) and western wheatgrass (*Agropyron smithii*), and buffalo grass (*Buchloe dactyloides*). Other common grasses include tumble grass (*Schedonnardus paniculatus*) and three-awn (*Aristida fendleriana* and *A. longiseta*). Fringed brome grass (*Bromus ciliatus*) dominates depressions and gullies within the mixed grass prairie. Areas dominated by crested wheatgrass, a non-native grass species historically used to revegetate disturbed ground, occur throughout the base. Herbaceous species associated with mixed grass prairie are scarlet globe mallow (*Spaeralcea coccinea*), prickly pear (*Opuntia macrohiza*), rabbitbrush (*Chrysothamnus nauseosus*), and snakeweed (*Gutierrezia sarothrae*).

Riparian habitats are characterized as bottomland meadows or cottonwood/willow. Bottomland meadows occur within the mixed grass prairie and may support wetlands. Fringed brome grass dominates the bottomland meadows and is generally associated with moist soil conditions (Buckley AFB, 2004). Plains cottonwood (*Populus deltoides*)/willow (*Salix sp.*) communities dominate riparian corridors. Cottonwood/willow habitat does not occur within the Proposed Action or action alternative sites, but does occur approximately 750 feet immediately down gradient of Alternative 1.

Areas dominated by weeds have been disturbed by past or current ground-disturbing construction activities or past grazing activities. Weed species observed include fringed sagewort (*Artemisia frigida*), cheatgrass (*Bromus tectorum*), field bindweed (*Convolvulus arvensis*), Canada thistle (*Cirsium arvense*), and Turssian thistle (*Salsola kali*). Noxious weeds observed at Buckley AFB include Dalmation toadflax (*Linaria genistifolia ssp. dalmatica*) and leafy spurge (*Euphorbia esula*) (Buckley AFB, 2004).

Landscaped areas consist of turf grass (Kentucky bluegrass, common Bermuda grass, wintergrass, and Alta fescue mixes). Ornamental tree species planted on Buckley AFB consist of green ash (*Fraxinus pennsylvanica*), honey locust (*Gleditsia triacanthos*), Colorado blue spruce (*Picea pungens*), ponderosa pine (*Pinus ponderosa*), Siberian elm (*Ulmus pumila*), Gambel oak (*Quercus gambelii*), and buffalo juniper (*Juniperus sabina*). Additionally, shelterbelts consisting

of several rows of shrubs and deciduous trees are used along property boundaries to filter noise, high winds, snow, and dust from high traffic areas.

Dominant vegetation of the Proposed Action and Alternative 1 & 2 sites consist of low quality mixed grass prairie dominated by crested wheatgrass, especially adjacent to the road.

3.6.1.2 Impacts

This section describes impacts to vegetation from construction and operation of the Freight Transfer Facility. Approximately 3 acres of vegetation would be removed or disturbed for construction of this facility.

No Action

No impacts to vegetation are expected under the No Action Alternative as no proposed facilities would be constructed or operated.

Proposed Action

The ROI consists of the proposed footprint of the facility, approximately 3 acres. In general, impacts to vegetation would be construction related, since operation of the facility would have no direct or indirect effects on vegetation. Additional impacts to existing vegetation would occur from any required utility connection to a proposed facility during construction. Construction impacts to vegetation would be generally direct and long-term in duration, though short-term impacts are discussed when applicable. Impacts to vegetation are generally categorized by their mode of action (direct/indirect) and intensity (minor/moderate) depending on the existing condition of each site. Adverse impacts to vegetation would be reduced by revegetating disturbed areas not planned for buildings, parking lots, streets, or landscaping. The areas would be seeded with native vegetation as soon as possible after construction is complete.

During construction, ground disturbance would result in direct minor, short-term adverse impacts from replacement of relatively undisturbed grassland vegetation with the facility. Operation of the facility would result in direct negligible, long-term adverse impacts.

Alternative 1

Construction of the Freight Transfer Facility on the Option 2 site would result in the displacement of approximately 3 acres of native and weedy grassland vegetation and weedy adjacent to a parking lot. Impacts would be minimized revegetating disturbed areas not planned for buildings, parking lots, streets, or landscaping. During construction, ground disturbance would result in direct minor, short-term adverse impacts from replacement of relatively undisturbed grassland vegetation with the facility. Operation of the facility would result in direct negligible, long-term adverse impacts.

Alternative 2

Impacts associated with construction on the Option 3 site would result in similar impacts as associated with the Proposed Action.

3.6.2 Wetlands

3.6.2.1 Affected Environment

A total of 23 wetlands were identified during a 2001 survey (Buckley AFB, 2004). Of these 23 wetlands, only one is in the vicinity of any of the Proposed Actions or their alternatives (Figure

3-4). This wetland is located at the southern end of Williams Lake, a man-made lake. USACE has ruled that Williams Lake and the associated drainage area are isolated waters and not hydrologically connected to Murphy Creek (Buckley AFB, 2004).

3.6.2.2 Impacts

The filling of wetlands and waters of the U.S. is regulated under the Clean Water Act, and construction in or near these sensitive areas would require Buckley AFB to apply for Section 404 permits (Buckley AFB, 2004). The ROI consists of the boundaries of the impacted wetland.

No Action

No impacts to wetlands are expected under the No Action Alternative, as no proposed facilities would be constructed or operated. Current operations do not impact designated wetlands.

Proposed Action

No wetlands are located in the vicinity of proposed site location; thus, no impacts to wetlands would occur.

Alternative 1

Construction of the Freight Transfer Facility at the Alternative 1 site would occur upgradient to the wetland. Fifty-foot buffers around the wetland would be established during construction and operation of the new facilities. Erosion and sediment control BMPs required by SWPPPs (e.g., silt fences), as well as spill prevention, control, and countermeasure procedures identified in the Buckley AFB Integrated Environmental Response Plan, would be implemented to further reduce the potential for impacts to wetlands. Implementation of measures to reduce impacts, including BMPs during all phases of construction, would minimize potential indirect impacts from sedimentation to this wetland. BMPs include using berms, brush barriers, check dams, erosion-control blankets, filter strips, sandbag barriers, sediment basins, silt fences, straw-bale barriers, surface roughening, and/or diversion channels. Therefore, it is expected that no permits would be required.

Minor, short-term adverse impacts to the wetland located at the northern edge of the site may occur during construction. No long-term adverse impacts to this wetland would be expected from either the construction, or operation as the wetland is not located in the site footprint.

Alternative 2

No wetlands are located in the vicinity of the Alternative 2 site location; thus, no impacts to wetlands would occur.

3.6.3 Wildlife

This section describes the wildlife species and their habitat associations at Buckley AFB. No aquatic habitat occurs within any of the proposed alternatives; therefore, animals associated with permanent water sources are not included in this analysis.

3.6.3.1 Affected Environment

The wildlife species known to occur basewide are described as follows:

Mammals

Pronghorn antelope (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*) occupy areas surrounding Buckley AFB, but do not occur on the base due to the exclusion fencing around the perimeter (Buckley AFB, 2004).

Carnivores inhabiting Buckley AFB include red fox (*Vulpes vulpes*), coyote (*Canis latrans*), American badger (*Taxidea taxus*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), and long-tailed weasel (*Mustela frenata*).

Small mammals observed at Buckley AFB include rodents and lagomorphs (rabbits). The most widely observed of these is the black-tailed prairie dog (*Cynomys ludovicianus*). Prairie dogs are considered keystone species of the shortgrass prairie ecosystem as they support a diverse array of other plant and wildlife species within their colonies. Prairie dogs are discussed in more detail in Section 3.6.4.

Other rodents known to inhabit Buckley AFB include plains pocket gopher (*Geomys bursarius*), thirteen-lined ground squirrel (*Spermophilus tridecemlineatus*), fox squirrel (*Sciurus niger*), deer mouse (*Peromyscus maniculatus*), and prairie vole (*Microtus ochragaster*). Common lagomorphs include black-tailed jackrabbit (*Lepus californicus*), white-tailed jackrabbit (*Lepus townsendi*), eastern cottontail (*Sylvilagus floridanus*), and desert cottontail (*Sylvilagus auduboni*).

Birds

The midgrass prairie community supports numerous bird species, many of which are ground-nesters. The most common songbirds inhabiting prairie include western meadowlark (*Sturnella neglecta*), horned lark (*Eremophila alpestris*), lark bunting (*Calamospiza melanocorys*), killdeer (*Charadrius vociferous*), black-billed magpie (*Pica pica*), mourning dove (*Zenaidura macroura*), western kingbird (*Tyrannus verticalis*), and eastern kingbird (*Tyrannus tyrannus*). Species more common in urbanized areas include house finch (*Carpodacus mexicanus*), common grackle (*Quiscalus quiscula*), and non-native house sparrow (*Passer domesticus*), rock dove (*Columba livia*), and European starling (*Sturnus vulgaris*).

Raptor species known or likely to occur at Buckley AFB include burrowing owl (*Athene cunicularia*; discussed further in Section 3.6.4), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamacensis*), prairie falcon (*Falco mexicanus*), and American kestrel (*Falco sparverius*). Additionally, bald eagle (*Haliaeetus leucocephalus*), ferruginous hawk (*Buteo regalis*) and rough-legged hawks (*Buteo lagopus*) may be observed in winter.

Reptiles and Amphibians

Plains spadefoot toad (*Spea bombifrons*) and great plains toads (*Bufo cognatus*) occupy grassland habitat along riparian floodplains and may occur on Buckley AFB (Hammerson, 1999). Bullfrog (*Rana catesbeiana*) and northern leopard frog (*Rana pipiens*) have been observed on the base but are generally found near a permanent water source, which does not occur in the vicinity of any of the four proposed projects or their project alternatives.

A variety of reptile species inhabit Buckley AFB; some of the more commonly observed species include northern prairie lizard (*Sceloporus undulatus garmani*), bullsnake (*Pituophis catenifer*), western hognose snake (*Heterodon nasicus*), plains garter snake (*Thamnophis radix*), and prairie rattlesnake (*Crotalus viridis viridis*) (Buckley AFB, 2004).

The existing wildlife habitats at the Proposed Action and action alternatives sites are described below.

Proposed Action

The habitat at this site is mixed grass dominated by crested wheatgrass, especially adjacent to the road. The Proposed Action site likely supports ground-nesting birds, raptors, small and medium sized mammals, and reptiles, as discussed in Section 3.6.4. No prairie dogs were observed on the site.

Alternative 1

The habitat at this site is mixed grass dominated by crested wheatgrass, especially adjacent to the road. The Alternative 1 site likely supports ground-nesting birds, raptors, small and medium sized mammals, and reptiles, as discussed in Section 3.6.4. Prairie dogs were observed on the site.

Alternative 2

The habitat at this site is mixed grass dominated by crested wheatgrass, especially adjacent to the road. The Alternative 2 site likely supports ground-nesting birds, raptors, small and medium sized mammals, and reptiles, as discussed in Section 3.6.4. No prairie dogs were observed on the site.

3.6.3.2 Impacts

This section analyzes potential impacts to wildlife species from implementation of the Proposed Action and alternative site locations for the facilities. The ROI analyzed for impacts to wildlife include the proposed action and the alternative sites, as well as immediately adjacent habitats.

Impacts to wildlife from construction activity include habitat loss, disturbance (avoidance and displacement) from construction or operation, and mortality to small-sized animals from crushing, burial, or lethal prairie dog removal (e.g., fumigation, see section 3.6.4). Habitat loss results from permanent removal of existing vegetation and replacement with pavement or structures, but habitat loss may be temporary in areas that are revegetated after construction. The destruction of black-tailed prairie dog colonies would result in the permanent loss of habitat for species dependent on prairie dog colonies for food or shelter. Impacts to black-tailed prairie dogs are discussed further in Section 3.6.4.

Nearly all bird species present on or within the vicinity of Buckley AFB area are protected by the Migratory Bird Treaty Act (MBTA), a federal act that prohibits destruction or disturbance of active nests which results in loss of eggs or young without a permit from the U.S. Fish and Wildlife Service (USFWS). All wild birds, including raptors, are protected under the MBTA, except for non-native species mentioned above. Vegetation-clearing, earth-moving, and other construction activities have the potential to destroy nests of bird species protected under the MBTA if construction occurs during breeding season, generally between March 1 and October 31. Additionally, noise from heavy equipment operation and other construction activities may temporarily disturb nesting birds, possibly resulting in nest abandonment.

No Action

No impacts to wildlife are expected under the No Action Alternative, as no proposed facilities would be constructed or operated. Current operations do not impact wildlife.

Proposed Action

Construction activity is likely to temporarily displace many animals due to noise, human presence, and heavy equipment. The duration and distance an animal is displaced is generally dependent on the individual or species, and an individual's response to disturbance may change with time. Direct impacts from mortality to smaller, less mobile species would occur during construction from ground-clearing and earth-moving. To avoid potential adverse impacts to ground-nesting birds and to comply with the MBTA, all vegetation should be cleared prior to March 1 or after October 31. If construction occurs during the nesting season and vegetation has not been cleared, surveys for active nests should be conducted (including ground nests). If active nests occur on site, protective buffers should be implemented in coordination with USFWS. Impacts during construction would be short-term, minor, direct adverse.

Under the Proposed Action, wildlife would be potentially displaced from 3.0 acres of habitat. This loss of habitat would result in long-term, minor direct adverse impacts to wildlife.

Alternative 1

In addition to the impacts discussed in the Proposed Action, several small black-tailed prairie dog burrows are located on the Alternative 1 site; removal of these burrows would represent a minor loss of habitat for predators and other animals inhabiting prairie dog burrows, such as rabbits, rodents, burrowing owls, and reptiles, if present. Prairie dogs and other animals may require relocation prior to initiating construction activities. The preferred method of removing prairie dogs is transfer to a raptor facility. Although this does not result in direct mortality of individuals, transfer to a raptor facility could still result in adverse impacts to individual black-tailed prairie dogs because they are part of the prey base for these birds. Approved lethal methods of removal, such as fumigation, would result in the direct loss of individual prairie dogs and other animals potentially inhabiting prairie dog burrows. During construction activities, impacts would be short-term, moderate, direct adverse.

Impacts would be similar to those described for the Proposed Action, with the exception that prairie dog burrows currently exist on the site. Under Alternative 1, wildlife would be displaced from 3.0 acres of habitat. This loss of habitat would result in long-term, minor direct adverse impacts to wildlife.

Alternative 2

Impacts would be similar to those described for the Proposed Action for this facility.

3.6.4 Threatened, Endangered, and Other Sensitive Species

Threatened and endangered plant and animal species are protected under the Endangered Species Act (ESA) or Colorado State law. An endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range; a threatened species is one that is likely to become endangered in the foreseeable future. Other sensitive species include those listed by the Colorado Division of Wildlife (CDOW) as special concern, which receive no formal protection, but are still considered when assessing potential project impacts.

3.6.4.1 Affected Environment

Federal and Colorado State listed threatened and endangered species, as well as CDOW species of concern, are shown in Table 3-4. Black-tailed prairie dogs and burrowing owls are known to occur within or in the vicinity of one of the Alternative sites; these species are discussed in more

SECTION THREE

Affected Environment and Environmental Consequences

detail below. A number of species that lack suitable habitat, are unlikely to occur, or would not be impacted are not discussed further. These species include black-footed ferret, swift fox, Preble's meadow jumping mouse, bald eagle, ferruginous hawk, plains sharp-tailed grouse, northern leopard frog, Utes ladies'-tresses, and Colorado butterfly plant.

Table 3-4. Threatened, Endangered, and Other Sensitive Species and Their Occurrence at Buckley AFB

Common Name	Scientific Name	Status		Potential for Occurrence on Sites
		Federal	State	
Mammals				
Black-tailed prairie dog	Cynomys ludovicianus	-	SC	Present.
Black-footed ferret	Mustela nigripes	E	E	Not present; Buckley AFB is within Block Clearance Zone in Colorado.
Swift fox	Vulpes velox	-	SC	Unlikely; occurs on eastern plains of Colorado in areas of native prairie. No observations at Buckley AFB.
Preble's meadow jumping mouse	Zapus hudsonius preblei	T	T	Not present; Buckley AFB is within the Denver Metropolitan Block Clearance Zone.
Birds				
Burrowing Owl	Athene cunicularia	-	T	Present. Nesting locations in vicinity of the Proposed Action and alternatives.
Bald Eagle	Haliaeetus leucocephalus	T	T	Occasional visitor; no known nest or roost locations within base.
Ferruginous Hawk	Buteo regalis	-	SC	Potentially present; no known nesting locations.
Plains Sharp-tailed Grouse	Tympanuchus phasianellus jamesii	-	E	Potentially present; no known nesting locations.
Amphibians				
Northern Leopard Frog	Rana pipiens	-	SC	Potentially present in association with permanent water sources. No permanent water sources in any proposed or alternative sites. Proposed and Alternative sites are directly up gradient from surface waters.
Plant				
Species Colorado Butterfly Plant	Gaura neomexicana ssp. coloradensis	T	-	Unlikely; survey conducted in 2004 with none found.
Utes ladies'-tresses	Spiranthes diluvialis	T	-	Unlikely; surveys conducted in 2001 with none found.

T = Threatened E = Endangered SC = Species of Special Concern in Colorado, CDOW listing

Black-tailed Prairie Dog

The black-tailed prairie dog was a Candidate for Listing under the ESA in 2000, but was removed from this status in 2004. However, black-tailed prairie dogs are still considered a Species of Special Concern by the CDOW due to their role as a keystone species and their importance to the shortgrass prairie ecosystem.

Black-tailed prairie dogs occur in many areas throughout Buckley AFB. They inhabit burrows, which form networks of tunnels, typically 3 to 6 ft (0.7 to 1.8 m) deep. Many other species inhabit prairie dog burrows, including burrowing owls, cottontails, other rodents, reptiles, insects, and spiders (Hoogland, 1995).

During site visits, prairie dog burrows were observed on the Alternative 1 site. No active burrows were observed at either the Proposed site or the Alternative 2 site. Figure 3-5 shows the location and estimated density of prairie dog colonies at each of the proposed sites (Buckley AFB, 2004).

Buckley AFB has a Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base (Buckley AFB, 2001) in place to address management of active black-tailed prairie dog colonies. This EA specifies that if a prairie dog colony would be affected by a proposed action, then prairie dogs would be removed prior to construction using approved removal methods described in the EA. This EA will act as guidance for all contractors performing construction activities on Buckley AFB.

Burrowing Owl

Burrowing owls are listed as threatened in Colorado but also receive federal protection under the MBTA.

Burrowing owls nest in abandoned prairie dog burrows and may be present during the breeding season (between March 1 and October 31) at any of the Proposed Action or Alternative sites. To deter a burrowing owl from nesting in or near a construction site, prairie dogs should be removed and burrows destroyed prior to March 1. However, if this is not possible, and should construction occur during the burrowing owl nesting season, pre-construction surveys would be conducted to determine the presence or absence of nesting burrowing owls at the proposed site, in accordance with the Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base (Buckley AFB, 2001). If nesting burrowing owls are present, a 150ft (45.72-m) buffer would be established around active nest sites during the breeding season to protect owls from disturbances associated with construction, especially increased noise.

During 2006 site visit, no evidence of burrowing owl nests was observed on proposed facility sites. However, locations of nests may differ from year to year and in past years have nested on the selected sites.

3.6.4.2 Impacts

This section analyzes potential impacts to black-tailed prairie dogs (Colorado species of special concern) and burrowing owls (Colorado threatened) from implementation of each of the proposed actions and alternatives for each of the facilities.

No Action

No impacts to threatened, endangered, or other sensitive species are expected under the No Action Alternative, as no proposed facility would be constructed or operated. Current operations do not impact threatened, endangered, or other sensitive species.

Proposed Action**Black-tailed Prairie Dog**

No Prairie Dog burrows were observed on the proposed site. Under the Proposed Action, 3.0 acres of potential habitat would be removed. This loss of habitat would result in both short-term, minor, direct adverse impact during construction, and long-term, negligible, direct adverse impacts to the Prairie Dog during operation; however, adjacent areas of suitable habitat would be available.

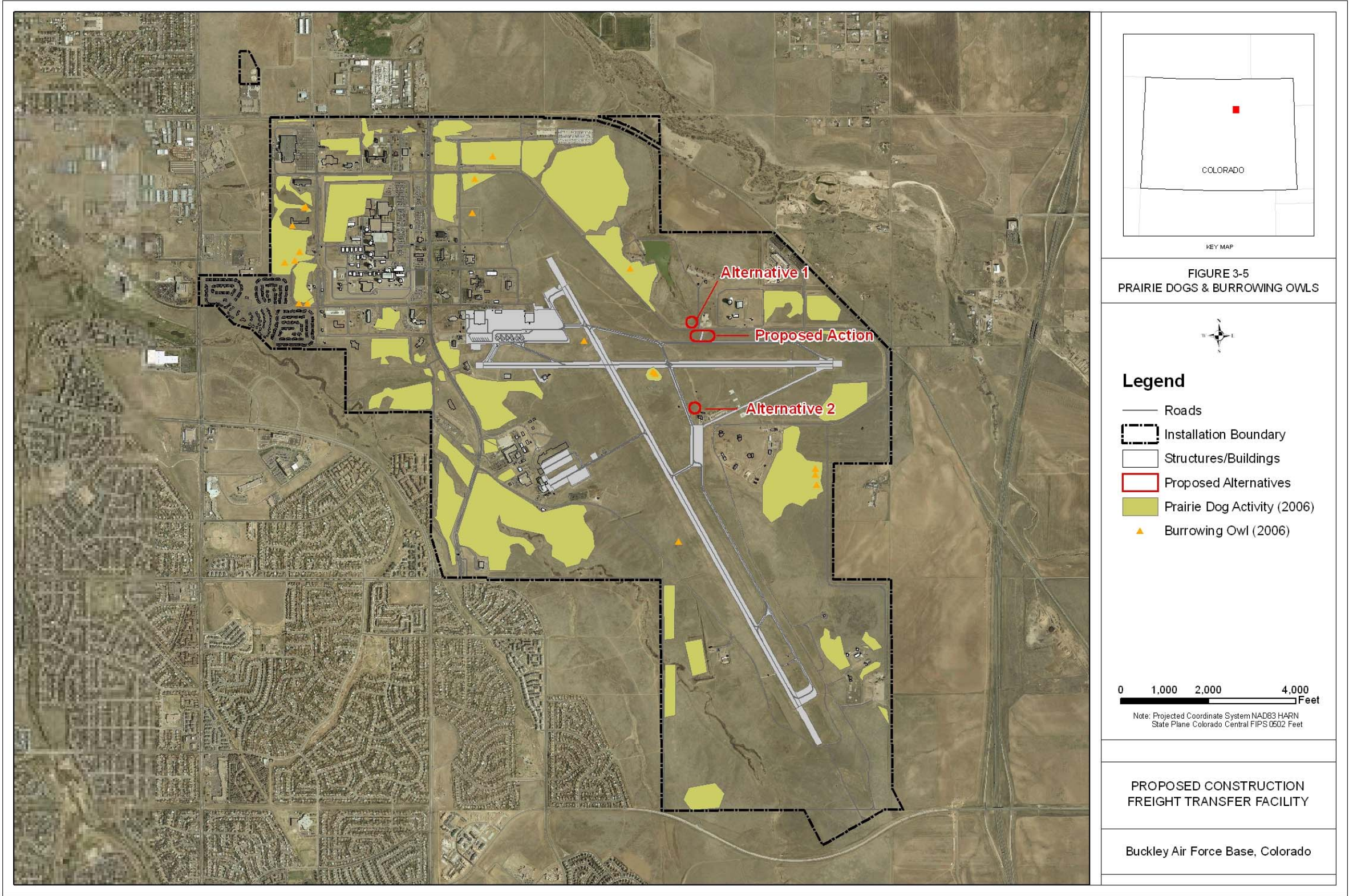
Burrowing Owl

Burrowing Owls have nested in various locations throughout Buckley AFB where suitable prairie dog habitat occurs (Figure 3-5). No Burrowing Owls were observed on the proposed site. Under the Proposed Action, 3.0 acres of potential habitat would be removed. This loss of habitat would result in both short-term, minor, direct adverse impact during construction. Operation of the facility would result in long-term, negligible, direct adverse impacts due to the loss of the potential habitat, however, adjacent areas of suitable habitat would be available.

Alternative 1**Black-tailed Prairie Dog**

Prairie Dog burrows were observed on the proposed site location for Alternative 1. Current guidance specifies that if a prairie dog colony would be affected by a proposed action, then prairie dogs would be removed prior to construction using approved removal methods. Approved prairie dog removal methods, including non-lethal and lethal methods, are described and analyzed in the Supplement to Environmental Assessment (EA) of Proposed Prairie Dog Practices at Buckley Air Force Base (Buckley AFB, 2001). First priority would be to live trap and relocate to another area on Base. Second option would be to live trap and transport to the USFWS ferret facilities. This option is provided for in the EA. A similar action would be to send them to a raptor rehabilitation center (not specifically addressed in the EA). Lethal means are being used inside the airfield and that is why no dogs were observed on the two sites within the airfield fence. Lethal means outside designated control areas are still not covered in any EA. However, because the black-tailed prairie dog was a federal candidate species when the EA was written, it only described and analyzed the use of approved lethal removal methods under specific circumstances. With the recent delisting of the black-tailed prairie dog, lethal methods, as well as methods not described in the Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base (Buckley AFB, 2001) (such as transferring prairie dogs to raptor facilities) may be used in any circumstance to eliminate safety- and/or mission-related impacts that occur due to the presence of this species (e.g., prairie dogs provide prey for raptors that contribute to bird-aircraft strike hazards). Therefore, impacts from lethal removal methods or capture and transfer to raptor facilities are considered as viable and analyzed in this construction EA.

Although black-tailed prairie dogs were recently delisted as a federal candidate species, the Supplement to Environmental Assessment of Proposed Prairie Dog Practices at Buckley Air Force Base (Buckley AFB, 2001) still provides black-tailed prairie dog management directive until it is revised or replaced by another EA or management directive. Prairie dogs are still considered a species of special concern in Colorado and their burrows do support numerous other wildlife species, including nesting burrowing owls. Moderate, direct, short-term adverse impacts



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to prairie dogs would occur from construction of the Freight Transfer Facility under Alternative 1.

Upon construction completion, native vegetation would be restored to areas not required for the Freight Transfer Facility in areas not covered by buildings or pavement or areas close to daily disturbance/operations., thus allowing the prairie dogs to reestablish their habitat. Operation of the facility at the Alternative 1 site would have minor, direct, long-term adverse impacts.

Burrowing Owl

No Burrowing Owls were observed on the Alternative 1 site during the site visit. Burrowing owls have nested in various locations throughout Buckley AFB where suitable prairie dog habitat occurs (Figure 3-5). The loss of prairie dog colonies would reduce the availability of burrowing owl nest sites, although nest sites would still be available in other areas of Buckley AFB. Moderate, indirect, short-term adverse impacts to burrowing owls during construction at the Alternative 1 site, would include loss of habitat as prairie dog colonies are destroyed and replaced with the proposed facilities.

Upon construction completion, native vegetation would be restored to areas not required for the Freight Transfer Facility, thus allowing the prairie dogs and burrowing owls to restore their habitat.

Alternative 2

Black-tailed Prairie Dog

No Prairie Dog burrows were observed on the proposed site. Under Alternative 2, 3.0 acres of potential habitat would be removed. Impacts would be similar to those described for the Proposed Action.

Burrowing Owl

Burrowing Owls have nested in various locations throughout Buckley AFB where suitable prairie dog habitat occurs (Figure 3-5). No Burrowing Owls were observed on the proposed site. Under Alternative 2, 3.0 acres of potential habitat would be removed. Impacts would be similar to those described for the Proposed Action.

3.7 HAZARDOUS MATERIALS AND WASTE

This section discusses hazardous materials and waste issues at Buckley AFB related to construction of the Proposed Action or action alternatives. This discussion includes asbestos, Buckley AFB ERP sites, fuel storage tanks, monitoring wells adjacent to site, proximity to range/unexploded ordnance (UXO) past and present activities, and polychlorinated biphenyls (PCBs). Solid waste and pollution prevention is addressed in Section 3.8.

3.7.1 Affected Environment

Site visits were conducted at the Proposed Action and action alternative locations. These site visits occurred on July 5 – 6, 2006. Sites were observed by walking the site perimeter and transecting the internal areas of the property. Photographs were taken during the site visit to document potential environmental concerns. Document reviews and interviews were also conducted to identify potential environmental concerns.

Asbestos

World War II (WW II) era buildings were on site at Buckley AFB around 1944 (Figure 3-6). These buildings were demolished during the late 1940s and early 1950s. The building materials were removed from the base but many of the foundations were left behind. The wide use of asbestos prior to 1980 contributes to concerns that demolition debris that was buried or spread may have contained asbestos, and may not have been remediated to today's standards. All projects should be evaluated before construction begins for such material but especially for the projects in old WWII building areas (Buckley AFB, 2005).

Installation Restoration Program

The Installation Restoration Program (IRP) is a program category under the Air Force Environmental Restoration Program (ERP). The scope of the IRP is investigation and cleanup of Air Force sites whose past activities created contamination primarily from hazardous substances, hazardous wastes, low level radioactive materials or wastes, or petroleum, oils, and lubricants. The Buckley IRP consists of ten sites, two of which have been closed, and one Area of Concern at the Buckley Annex. Also ongoing is an expansion of the Preliminary Assessment and Site Inspection conducted by the Colorado Air National Guard in the 1980s. This nationwide search for historical Army, Navy, and National Guard records is designed to determine whether there are contaminated sites not previously discovered at Buckley.

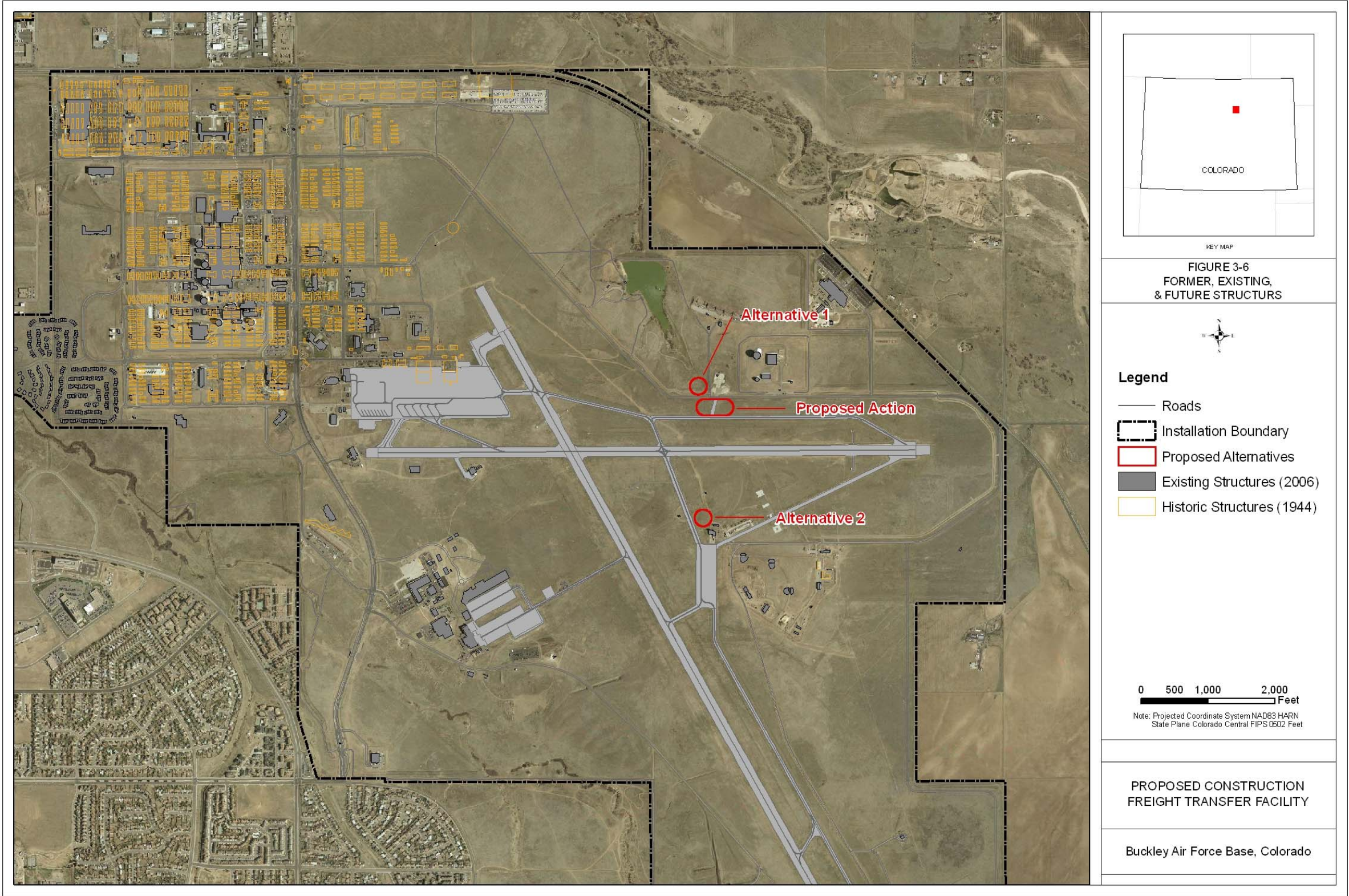
ERP sites are illustrated in Figure 3-7. Note that Sites 1, 5, and 8 are in close proximity to proposed or alternative action sites. Site 1 (small gold rectangle on Figure 3-7) is in the Feasibility Study phase of remediation, site 5 is in the Remedial Investigation phase of remediation, and site 8 is classified as a closed site.

Military Munitions Response Program

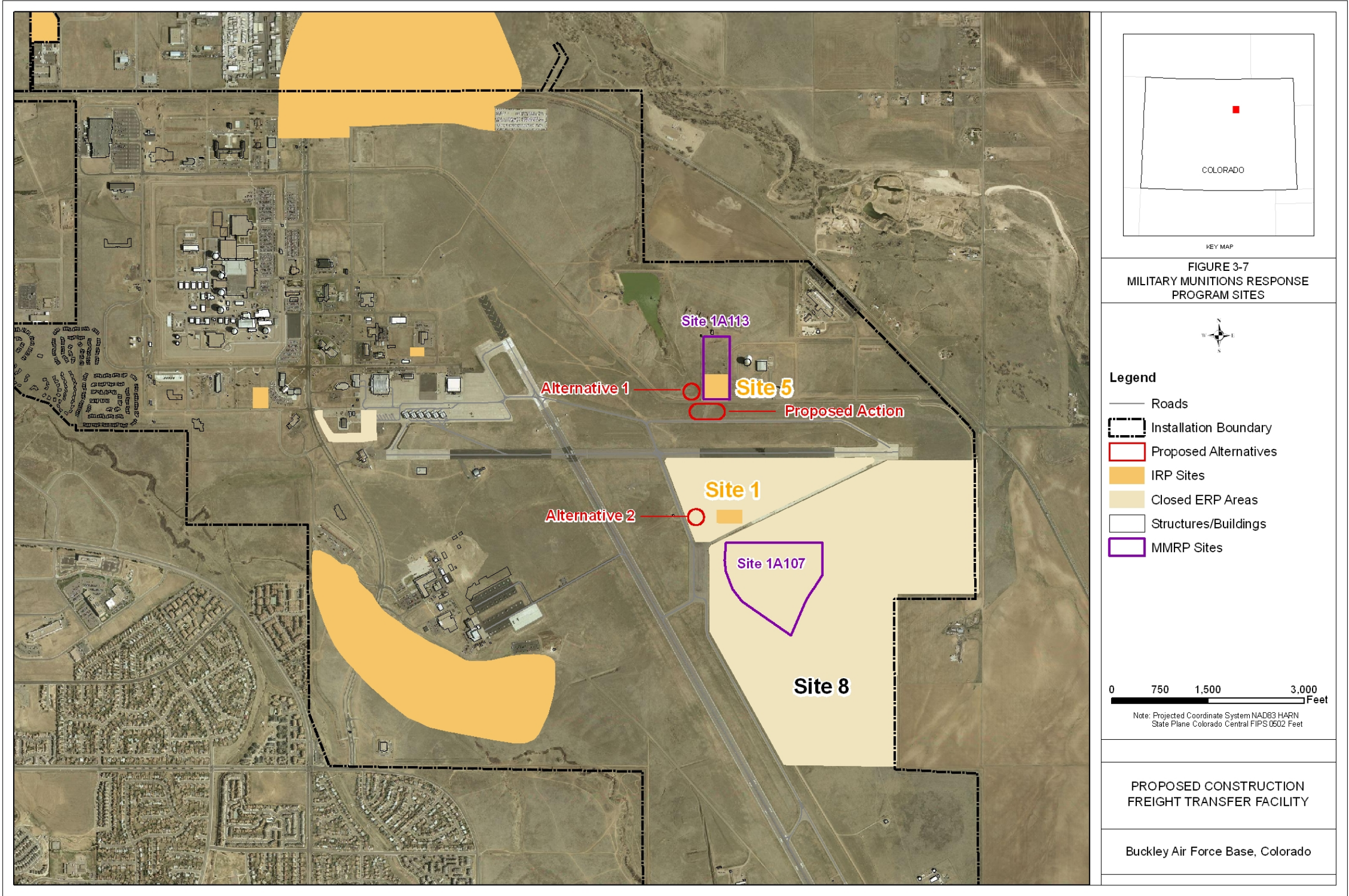
The Military Munitions Response Program (MMRP) is another program category under the Air Force ERP. The scope of the MMRP is investigation and cleanup of other-than operational ranges contaminated with military munitions, e.g., unexploded ordnance, or chemical residues of munitions. Buckley currently has seventeen MMRP sites. The former Boresight Range Berm, IA113, is located approximately 400 feet to the north of the Proposes site and approximately 100 feet north of the Alternative One site. The former 50 Caliber Round Burial site is located approximately 1,500 feet to the southeast of the Alternative Two site. Additionally soils from the berm of the Abandoned Outdoor Range have been discovered in areas within Buckley. If berm soils from the MMRP site are located elsewhere on Buckley, investigations of the area would be warranted. The Air Force MMRP is centrally managed by Air Staff, which recently initiated a Comprehensive Site Evaluation, Phase I, at each base to identify additional MMRP sites that may require responses to protect human health and the environment.

Fuel Storage Tanks

Prior to 1998, the majority of underground storage tanks (USTs) were removed from Buckley AFB (Buckley AFB, 2005). However, aboveground storage tanks are still located at several locations around the base. Buckley AFB has a current draft Spill Prevention and Countermeasure Control Plan (SPCC). One UST was removed in 2005 from Building 1606 located south of Alternative 2. Soil contamination was found, and a No Further Action Request was submitted to the Colorado Department of Public Health and Environment (CDPHE). The CDPHE denied the request and required additional field work to better delineate soil contamination and to determine



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whether free product exists. A draft report and a new No Further Action Request are currently under review by the Air Force.

Proposed Action

There is no evidence of former WWII structures being located at the Proposed Action site locations.

The Proposed Action site is not located within an ERP site.

A diesel tank and propane tank are located at a radar facility to the north of the site.

There are no known fuel storage areas, monitoring wells, or past MMRP activities within this site location. The closet MMRP site is located approximately 400 feet to the north.

Alternative 1

There is no evidence of former WWII structures being located at the Alternative 1 location.

Alternative 1 is located adjacent to former ERP Site 5. ERP Site 5 is in the Remedial Investigation Phase of remediation.

A diesel tank and propane tank are located at a radar facility to the east of the site.

There are no known fuel storage areas, monitoring wells, or past MMRP activities within this site location. The closet MMRP site is located approximately 100 feet to the north.

Alternative 2

There is no evidence of former WWII structures being located at the Alternative 2 location.

Alternative 2 is located within former ERP Site 1 and adjacent to former ERP Site 8. ERP Site 1 is in the Site Inspection Phase of remediation. ERP Site 8 is classified as being closed.

Monitoring wells were observed during site visits. One UST was removed adjacent to Building 1606 located to the south of the site approximately 500 feet.

The closet MMRP site is located approximately 1,500 feet to the southeast.

Soil mounds and pits were observed during the site visit that may indicate past dumping or burial may have occurred at the site. These mounds would be investigated and remediated if required prior to ground disturbance activities associated with construction.

A diesel tank and propane tank are located at a fire station facility to the south of the site.

3.7.2 Impacts

This section discusses areas of potential environmental concern associated with the construction of the Proposed Action or action alternatives.

No Action

No direct impacts to hazardous materials and wastes are expected as a result of the No Action Alternative. Current operations would have no impact on existing conditions discussed in this section.

Proposed Action

No impacts are expected from asbestos or ERP site 5 (located north of Steamboat Avenue) at the proposed location.

The tanks located at the adjacent facility are down-gradient from the proposed construction area and should not impact construction activities.

No impact is expected from the MMWR site. If berm soils from the MMRP sites are located during construction, additional investigations of the area would be warranted.

Construction and operation of the facility at the identified site would have no impact on existing conditions discussed in this section.

Alternative 1

No impacts are expected from asbestos or ERP site 5 (located adjacent to the site on the east side). The actual siting of the site will be such that construction will not impact the boundaries of site 5 which is in the Remedial Investigation phase of remediation.

The tanks located at the adjacent facility are down-gradient from the proposed construction area and should not impact construction or operation of the facility.

No impact is expected from the MMWR site. If berm soils from the MMRP sites are located during construction, additional investigations of the area would be warranted.

Construction and operation of the facility at the identified site would have no impact on existing conditions discussed in this section.

Alternative 2

Based on the location ERP Site 1 and the status of ERP Site 8, the construction activities would not be impacted.

Contaminated soils in the area of the removed UST adjacent to Building 1606 located south of Alternative 2 should have no impact. If contaminated soils are discovered during the construction, further investigation would be warranted.

No impact is expected from the MMWR site. If berm soils from the MMRP sites are located during construction, additional investigations of the area would be warranted.

The soil mounds and pits located on the site would be investigated further prior to construction in order to determine if they would impact construction activities.

Construction and operation of the facility at the identified site would have no impact on existing conditions discussed in this section.

3.8 SOLID WASTE AND POLLUTION PREVENTION

The USAF Pollution Prevention (P2) Program encompasses a range of environmental management functions, including recycling, hazardous/toxic chemicals reduction, green (environmentally friendly) procurement, and waste minimization. The USAF Solid Waste Program deals specifically with the management and reduction of solid waste streams. Both of these programs may affect nearly every aspect of operations at Buckley AFB.

A private contractor provides solid waste collection and disposal services at Buckley AFB. Waste is collected from dumpsters located throughout the base and routinely transported to the

Denver-Arapahoe Disposal Site in Arapahoe County. Buckley AFB generated approximately 28,950 tons of non-hazardous waste in FY05, with 1,624 tons of this waste being construction and demolition derived wastes.

Each AFB is required to have a Qualified Recycling Program (QRP), and all facilities at an installation must participate in the QRP. Under the QRP, readily accessible containers should be provided in work areas as appropriate for the accumulation of the following recyclables: copier paper, plastic, metals, glass, used oil, lead acid batteries, cardboard, newspaper, and tires. A recycling contractor empties recycling containers on a regular schedule and recycles the collected materials.

Reduction of hazardous material use at USAF installations is normally achieved through the implementation of a hazardous materials pharmacy (HAZMART), a centralized location for inventory, control, and distribution of hazardous materials to authorized shops. Buckley AFB has a “virtual” HAZMART, meaning that the installation does not distribute hazardous materials from a central location, but instead tracks and controls use through a computerized tracking system. Reduction efforts focus on the 31 critical chemicals prioritized by USEPA for reduction due to particularly high associated environmental and human health hazards. Various initiatives are used to reduce use, including control of use through the chemical authorization process, limits on quantities distributed, and substitution of non-hazardous products. Ozone-depleting substances are also targeted for reduced use or substitution.

Green Procurement is the USAF initiative established to comply with federal Affirmative Procurement requirements. Green procurement seeks to direct USAF purchasing power toward the procurement of high recycled-content goods, from copier paper to construction materials. AF Green Procurement extends to the construction on-base where contractors are required to purchase Environmentally Preferable Products and Services (FAR 23.7).

3.8.1 Affected Environment

The USAF P2 and Solid Waste Programs facilitate the reduction of solid waste (both hazardous and nonhazardous) through adjustments to the behaviors and work practices of facility personnel. The mission at Buckley AFB demands a variety of industrial and non-industrial facilities and processes. The P2 and Solid Waste Management Programs impact all of these, and would have impacts on operations at any new facilities constructed at Buckley AFB. New facilities would be required to participate in the same USAF P2 and solid waste management activities as similar existing facilities.

3.8.2 Impacts

No Action

If the No Action Alternative is implemented, solid waste generation at Buckley AFB would not increase. Buckley AFB P2 solid waste management would be unaffected. Current operations would have no impact.

Proposed Action

Building construction and delivery of construction supplies would increase solid waste generation (e.g., concrete, building materials, any associated demolition debris) during the project performance period. Certain forms of construction-related solid waste might be eligible for diversion to recycling. Construction contractors should attempt to recycle waste materials for

which a market exists, procure recycled-content materials whenever feasible per USAF Green Procurement requirements, minimize the use of hazardous materials during construction, and remove any unused hazardous and non-hazardous wastes at the conclusion of project performance. Construction activities would have minor, direct, short-term adverse impacts.

Since the Proposed Action is limited to consolidating an existing activity currently at Buckley AFB with little change to existing personnel and operations, no impact to P2 initiatives or solid waste generation are anticipated following completion of construction.

Alternative 1

Impacts from Alternative 1 would be the same as the Proposed Action.

Alternative 2

Impacts from Alternative 2 would be the same as the Proposed Action.

3.9 TRANSPORTATION

This section presents information regarding traffic flow within Buckley AFB.

3.9.1 Affected Environment

Buckley AFB is situated within the Denver metropolitan area (Figure 1-1). Three major arterial routes surround Denver, including I-25, I-70, and I-76. A north-south trending road, I-225, runs between and connects I-25 and I-70. In addition, E-470, a toll road that runs north-south near the eastern boundary of Buckley AFB, provides an alternate beltway route around the eastern half of the Denver metropolitan area. Running east-west are two major arteries, 6th Avenue and Mississippi Avenue. Access to Buckley AFB is available via gates at the intersections of Aspen Street and 6th Avenue (Main Gate), Aspen Street and Mississippi Avenue (Mississippi Gate), and Sixth Avenue and Telluride Avenue (Telluride Gate). Traffic through the Telluride gate is primarily Base Exchange/Commissary traffic. Truck Traffic (delivery, equipment, fuel, etc.) must enter the Mississippi Gate. The East Side Gate is restricted access for munitions traffic entering the base. Aspen Street is a 4-lane, divided street running north to south from the North Gate to the South Gate. Breckenridge and Steamboat Avenues distribute traffic from Aspen Street to the major industrial and flightline areas.

No Action

Traffic flows would be unchanged as a result of the No Action Alternative.

Proposed Action

The primary point of egress under the Proposed Action would occur on Steamboat Avenue, two-lane asphalt roadway. This street provides the only access to the proposed site from the main base and creates a paved access along the north side of the airfield.

Alternative 1

The primary point of egress under Alternative 1 would be the same as the Proposed Action.

Alternative 2

The primary point of egress under Alternative 2 would be the same as the Proposed Action.

3.9.2 Impacts

The access points and impacts associated with the construction and operation of the new facility is briefly described for the Proposed Action and action alternative locations.

No Action

No impacts are expected under the No Action Alternative, as no construction would occur. Current traffic associated with ongoing operations would remain unchanged.

Proposed Action

Although traffic loads may increase slightly during construction, there would be no major changes to the existing traffic patterns, capacity, or volume. No new employees are expected to be brought onto base to staff the proposed facility, and staff would move from existing facilities. Accessing the Proposed Action site would redirect traffic from the existing transfer locations located on the west side of the flight line to the Proposed Action location. However, the number of people accessing the site daily would not have a major impact on traffic flow. Although traffic loads may increase slightly during construction, changes would be minimal to the existing traffic patterns, capacity, and volume. Minor, direct, short-term impacts to transportation would be experienced during the construction of the facilities. No new employees would be brought on the base to staff the proposed facility, as staff would be relocated from existing facilities. Transportation impacts associated with the operation of the facility would be negligible, direct, long-term.

Alternative 1

Impacts from Alternative 1 would be the same as those listed for the Proposed Action.

Alternative 2

Impacts from Alternative 2 would be the same as those listed for the Proposed Action.

3.10 UTILITIES**3.10.1 Affected Environment**

Public providers supply water, gas, and electrical power to Buckley AFB. Since 2001 Buckley AFB has been proactive in increasing the capacity of its infrastructure systems.

Water System

Potable water is provided by the city of Aurora directly to Buckley AFB facilities without supplementary treatment. There are two connections to the city pipelines: (1) along 6th Avenue, a water main connects to a line that provides the primary source of potable water to the installation; and (2) along Mississippi Avenue, a water main provides emergency backup should the water main on 6th Avenue fail. Water consumption for 2005 was 131,094,000 gallons. There are no contractual limits on the amount of water the installation may use (Buckley AFB, 2005).

Sanitary Sewer

Wastewater flow from Buckley AFB is conveyed through an on-base sanitary sewer system to the city of Aurora's wastewater collection system, and then to one of two wastewater treatment facilities. The majority of the installation's sanitary sewer system is composed of vitrified clay pipe, which was installed in the 1940s and 50s. The more recently installed sections of sewer main are polyvinyl chloride pipe, which is now used for all sewer upgrades on the installation

(Buckley AFB, 2005). The wastewater is primarily directed to and treated at the city of Denver's Metro Wastewater Reclamation District, located at 64th Avenue and York Street. The city of Aurora's total flow contribution to this treatment facility ranges between 18 and 20 million gallons per day. The other treatment facility, the Sand Creek Treatment Facility, is owned and operated by the city of Aurora and processes approximately 10 percent of Aurora's total discharge (Buckley AFB, 2004a). Utilizing 2003 data, Buckley AFB discharged 1.4 million gallons of wastewater per day or 511 million gallons per year (Buckley AFB 2006A)

Storm Drainage

Stormwater is collected and transmitted through a system of surface ditches and channels. An underground storm drainage system has been installed around the runway, portions of the taxiways, and the hangars and facilities north of the Main Ramp. These structures direct stormwater to the adjoining areas of the city of Aurora, East Toll Gate Creek, or the stormwater detention pond located east of Aspen Street and south of Steamboat Avenue. There are two primary drainage basins-the Sand Creek basin and the East Toll Gate Creek Basin. The dividing line between them runs roughly parallel and east of Runway 14/32 (Buckley AFB, 2005).

Electrical System and Natural Gas

Buckley AFB receives electrical power and natural gas from Xcel Energy (Buckley AFB, 2005). In 2005, Buckley AFB had approximately 2.6 million square feet of facilities, and utilized 131,681,354 kilowatt hours of electricity (Buckley AFB 2006A).

3.10.2 Impacts

Issues and concerns regarding infrastructure are related to creating stress on infrastructure systems, such that the existing infrastructure must be updated or changed. Assessing impacts to infrastructure entails a determination of infrastructure that would be used as a result of the Proposed Action or action alternatives.

No Action

The No Action Alternative would have no impact on utilities as operations would remain unchanged, and no new construction would occur.

Proposed Action

According to utility maps in the Buckley AFB General Plan, there are no electric, sanitary sewer lines, or natural gas lines distributed to the Proposed Action site location; however, all are distributed within the vicinity of the area. Water and Storm Water are on-site. The other three services would have to be extended into the site location from various locations. Approximate distances for each would be:

Electrical Distribution	200 feet
Natural Gas	1,500 feet
Wastewater	100 feet.

The addition of these connecting lines would result in additional impact beyond the three acres associated with the construction of the facility. This impact would be temporary in nature.

Because sanitary sewer service is not available, at the location, it is assumed that a septic system and leach field may be considered as an option for sewerage disposal. Electrical service would

have to be extended into the site location. Natural gas is remote from the complex and would require an extension of the main to reach the site. Communications would need to be served from existing trunk lines located along Steamboat Avenue.

No burden on the provider of utility support is anticipated because there is no anticipated increase in base personnel and spaces heated are of minimal size. However, the base would need to expand the potable water, electric, natural gas, and sanitary networks.

During the construction phase, water would be utilized to compact soils, and maintain dust control. Utilizing an estimate of 500 gallons / day / acre (Buckley AFB 2006A) and an estimated site development of 30 days generates a total consumption of 45,000 gallons of water or 0.034% of the annual amount utilized by Buckley AFB in 2005. Both sewage and electrical systems would be minimally impacted during the construction of the facility. Overall impacts would be minor, direct, short-term during the construction of the facility.

Operation of the facility will have negligible impacts to the utility systems. Using an estimate of 100 gallons / day / individual for a 24 hour, seven day a week operation, water consumption is estimated to be 401,500 gallons of water annually, or an increase of 0.03% of the annual amount utilized by Buckley AFB in 2005. Assuming a direct ratio of building square footage to electrical use, the proposed facilities would utilize approximately 607,000 kilowatt hours of electricity annually, an increase of 0.46%. Overall impacts would be minor, direct, long-term during the operation of the facility.

Utilizing a septic system and leach field would eliminate the impact to the wastewater treatment facilities. Utilizing a conservative assumption that 100% of the water consumed would be discharged as wastewater, an increase of 401,500 gallons annually would be anticipated. This is an increase of 0.08%. If a septic system is installed, this discharge would be processed annually to the septic system and leach field. Prior to installation of a septic system and leach field, appropriate geological testing would need to be accomplished, in addition to obtaining required permits from the Tri-County Health Department. Impacts associated with the use of a properly designed septic system and leach field would be negligible, direct, long-term.

Alternative 1

According to utility maps in the Buckley AFB General Plan, electric, sanitary sewer lines, and storm water are on site, and natural gas would have to be brought into the site. Approximate distance for the natural gas line would be approximately 1,000 feet. This additional distribution line would cause an additional temporary impact beyond the three acres associated with the construction the facility.

No burden on the provider of utility support is anticipated because there is no anticipated increase in base personnel and spaces heated are of minimal size. However, the base would need to expand the potable water, electric, natural gas, and sanitary networks.

Impacts associated with both the construction and operation of the facility would be similar to those discussed for the Proposed Action.

Alternative 2

According to utility maps in the Buckley AFB General Plan, all utilities are available within the proposed site location. Connection to the existing distribution lines would be the only disturbance and would fall within the impact associated with the construction of the facility.

No burden on the provider of utility support is anticipated because there is no anticipated increase in base personnel and spaces heated are of minimal size. However, the base would need to expand the potable water, electric, natural gas, and sanitary networks.

Impacts associated with both the construction and operation of the facility would be similar to those discussed for the Proposed Action.

3.11 SUMMATION OF ENVIRONMENTAL IMPACTS AND BEST MANAGEMENT PRACTICES

Table 3-5 compares the impacts to resources analyzed in this EA for the No Action Alternative, Proposed Action, Alternative 1, and Alternative 2.

Table 3-5. Comparison of Alternatives with Resource Impacts Resources

Facility Transfer Facility		No Action Alternative	Proposed Action	Alternative 1	Alternative 2
Land Use	Construction	No Impact	Short Term Negligible Adverse	Short Term Minor Adverse	Short Term Negligible Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Minor Adverse	Long Term Negligible Adverse
Air Quality	Construction	No Impact	Short Term Negligible Adverse	Short Term Negligible Adverse	Short Term Negligible Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Noise	Construction	No Impact	Short Term Moderate Adverse	Short Term Moderate Adverse	Short Term Moderate Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Soils	Construction	No Impact	Short Term Minor Adverse	Short Term Minor Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Water Resources	Construction	No Impact	Short Term Minor Adverse	Short Term Minor Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Biological Resources					
Vegetation	Construction	No Impact	Short Term Minor Adverse	Short Term Minor Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse

Facility Transfer Facility		No Action Alternative	Proposed Action	Alternative 1	Alternative 2
Wetlands	Construction	No Impact	No Impact	Short Term Minor Adverse	No Impact
	Operation	No Impact	No Impact	Long Term Negligible Adverse	No Impact
Wildlife	Construction	No Impact	Short Term Negligible Adverse	Short Term Moderate Adverse	Short Term Negligible Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Threatened, Endangered, and Other Sensitive Species	Construction	No Impact	Short Term Minor Adverse	Short Term Moderate Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Hazardous Materials and Waste	Construction	No Impact	No Impact	No Impact	No Impact
	Operation	No Impact	No Impact	No Impact	No Impact
Solid Waste and Pollution Prevention	Construction	No Impact	Short Term Minor Adverse	Short Term Minor Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Transportation	Construction	No Impact	Short Term Minor Adverse	Short Term Minor Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Negligible Adverse	Long Term Negligible Adverse	Long Term Negligible Adverse
Utilities	Construction	No Impact	Short Term Minor Adverse	Short Term Minor Adverse	Short Term Minor Adverse
	Operation	No Impact	Long Term Minor Adverse	Long Term Minor Adverse	Long Term Minor Adverse

Table 3-6 identifies the Environment of Concern and Best Management Practices to be considered during construction and operation of the Freight Transfer Facility.

Table 3-6. Best Management Practices

	Best Management Practice
Land Use	None
Air Quality	PM-10 reduction by: <ul style="list-style-type: none"> • Applying water on haul roads and other exposed earth surfaces • Wetting equipment and excavation faces • Spraying water on buckets during excavation and dumping • Hauling materials in properly tarped or watertight containers • Restricting vehicle speeds to 10 mph • Covering excavated areas and material after excavation activity ceases • Reducing the excavation size and/or number of excavations.
Noise	None
Construction	Use of equipment exhaust mufflers Restriction of construction activity to normal working hours (between 7:00 AM and 5:00 PM).
Operation	Design Guidelines for "Zone 7"
Soils	<ul style="list-style-type: none"> • Sediment and Erosion Control Plans • SWPPPs prepared to minimize potential erosion and sedimentation during the construction phase • Soil removed during the project would be used as fill material or stock piled for use at other locations on Buckley AFB • Fugitive dust generated during construction activities would be minimized by watering and soil stockpiling • Recycle removed soils • Installation of deep foundation systems, can decrease potential impacts from expansive soils.
Water Resources	<ul style="list-style-type: none"> • Using proper pavement design for portions of parking lots to control run-off • Minimizing contiguous areas of impervious surfaces by using landscaping, grass buffer strips, or grass-lined swales and directing runoff from a site to these features • Limit stockpiling of materials onsite • Manage stockpiled materials to minimize the time between delivery and use • Cover stockpiled materials with tarps • Install snow or silt fences around material stockpiles, stormwater drainage routes, culverts, and drains • Install hay or fabric filters, netting, and mulching around material stockpiles, stormwater drainage routes, culverts, and drains
Biological Resources	
Vegetation	Reseeding
Wetlands	Use of berms, brush barriers, check dams, erosion-control blankets, filter strips, sandbag barriers, sediment basins, silt fences, straw-bale barriers, surface roughening, and/or diversion channels.
Wildlife	Survey prior to construction for migratory birds and their nests in order to protect from harm.
Threatened, Endangered, and Other Sensitive Species	<ul style="list-style-type: none"> • Survey prior to construction • Live trap, removal, and transfer to ferret or raptor facilities of prairie dogs prior to owl nesting season. • Prairie dogs removed and burrows destroyed prior to March 1
Hazardous Materials and Waste	<ul style="list-style-type: none"> • Minimize use, dispose per manufacture's directions • Recycle waste • Purchase Environmentally Preferable Products and Services
Solid Waste and Pollution Prevention	Recycle materials
Transportation	None
Utilities	None

4.1 IMPACT ANALYSIS

The Council on Environmental Quality (1978) regulations for implementing NEPA requires assessment of cumulative effects in the decision-making process for federal actions. Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects are considered for both the no action alternative and the action alternative. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

Both additive and interactive cumulative impacts are assessed. Additive impacts accumulate by adding more of the same impact on a resource. Interactive impacts accrue as a result of assorted similar or dissimilar actions being taken that tend to have similar impacts, relevant to the valued resource in question.

The geographic area of influence for cumulative impacts varies according to resource area.

The temporal scope is the same for all resources and is defined as impacts that have taken or would take place within the next 10 years.

Cumulative effects were determined by combining the effects of the Proposed Action with other past, present, and reasonably foreseeable future actions. Past actions considered include Buckley AFB's past, dating back to 2000 when it stood up as an Air Force Base, development of the Defense Intelligence Agency (DIA), and the former Lowry AFB. Present and on-going actions include currently ongoing Buckley AFB projects, and the proposed Buckley AFB Capital Improvement Plan (CIP) projects,

Because the scope and effect of this EA is limited to Buckley Air Force Base, only those projects that are likely to have large-scale effects were considered for cumulative impacts. Large-scale projects include construction of buildings. Smaller projects, such as rehabilitation of roads, were determined to be of scales that are not reasonably cumulative when considered with the larger scale projects. Appendix B contains a list projects currently on-going or scheduled to be constructed at Buckley AFB.

Actions that would contribute to cumulative impacts include past construction and training activities and present and foreseeable construction activities. Impacts from past training activities are generally low and short-term and would have little contribution to cumulative impacts. Cumulative Impact data obtained from the Final Environmental Assessment for Capital Improvement Projects (CIP), Buckley AFB, March 2006 was updated to include projected impacts associated with this proposed action. The updated data presented in Appendix C and summary text from the CIP was used to develop the cumulative impact summaries for the areas of environmental concern presented in the following sections. Each section will address the anticipated cumulative impacts for the No Action, Propose Action, and Alternative Actions.

4.1.1 Land Use

According to the City of Aurora Comprehensive Plan, the Airport Influence District (AID), Noise Impact Districts, and Accident Potential Zones are located within the Buckley AFB Area Plan. These zones regulate development within lands affected by base air operations and are

subject to additional Federal Aviation Administration building placement and height restrictions. All of the areas in Aurora immediately to the east of Buckley AFB are currently located within the Buckley Research and Development Subarea Zoning District. Under this zoning district, office, commercial, and industrial development is allowed. To preserve the base's flight operations, residential development is not designated under this zone.

The Arapahoe County Comprehensive Plan indicates that Buckley AFB is within the Urban Service Area and that adjacent land uses in Arapahoe County are planned for an Employment Center with open space designated along the riparian areas located within the Aurora E-470 Plan Area. Employment Centers include research and development, service and office centers, warehousing, light industrial and educational facilities. Current zoning maps show small areas zoned for single family 1 dwelling unit per 19 acres and most remaining portions are zoned as light industrial.

The geographic area evaluated for cumulative impacts encompasses all existing and proposed land uses located within the 75 dB DNL noise contours, the north, west, and east transportation corridors and base access entries bordering Buckley AFB. The rationale for selecting the 75 dB DNL noise contour is that it provides an off-base intersect for noise generated at Buckley AFB. Existing land uses, landscapes and scenic views surrounding the base, and future land uses designated in the City of Aurora E-470 Plan Area, City of Aurora and County of Arapahoe Comprehensive Plans including subareas that border the base are located within the limits of this noise contour.

In the future, if several land units were to be annexed to the City of Aurora there would be increasing office and commercial development on the eastern boundary of Buckley AFB. These areas are designated in the E-470 Land Use Plan Map to be zoned as part of the Buckley Research and Development Subarea.

Residential or commercial development could occur on Buckley AFB's southwestern boundary thereby reducing the scenic views of the mountains from the Privatized Housing ADP. However, the location and number of open spaces, parks, streetscapes, and landscape improvements that are made both on-base and off-base and along transportation corridors would enhance the immediate landscape surrounding Buckley AFB.

An overall population increase between 450 and 640 personnel by 2010 would increase the pedestrian and vehicle traffic and use of base facilities. Increasing base population affects residential quality of life and recreational experience. The experience of on-base residents would be affected by the presence, density, and behavior of all other residents and base visitors. Undesirable activities such as vehicle speed, crowding at outdoor recreational facilities, and littering would continue. Increased pedestrian foot traffic could increase trailing and compact soils, affecting landscaped areas, and open, and recreational spaces. Noise from traffic and aircraft operations would continue to be heard.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Source contributions to cumulative impacts associated with implementing either the Proposed

Action or Alternative 1 or 2 would be the development of approximately three acres of undeveloped land into an industrial facility and the addition of approximately eleven personnel. When assessed in conjunction with the ongoing and projected activities as discussed above and in Appendix C, there are no significant unavoidable adverse impacts. Therefore, cumulative impacts are expected to be minor.

4.1.2 Air Quality

The area evaluated for cumulative impacts includes the “*area of applicability*” and includes county air emission inventories that may ultimately be excluded from the non-attainment boundaries designated by the EPA, and therefore, from the scope of Colorado’s Early Action Compact (EAC) Ozone Action Plan (CAQCC 2004). Colorado’s air quality analysis uses emission inventories from most of the western United States. The “*area of applicability*”, or ROI used for analysis in this EA is not considered a geographic area. The cumulative impacts are based on this analysis; therefore the area evaluated for cumulative impacts is consistent with EAC.

As with development and construction of buildings and facilities at Buckley AFB, development of areas within the ROI would create air emissions from construction and demolition activities, the operation of new buildings, and facilities and increased traffic associated with use of new facilities. While emissions from operation of buildings and facilities at Buckley AFB would generally be created by use and occupation of the structures (personal vehicle travel, HVAC and hot water heating), emissions created through development within the ROI would likely encompass a larger number of source-types. Although a significant portion of development within the ROI would consist of residential development, light industrial, commercial and retail development would also occur. While some emissions from nonresidential sources would be similar to those created by residential building operations, greater emission types, concentrations, and volumes are likely to result from light industrial, commercial and retail development. For example, light industrial development may result in increased combustion emissions if facilities require heating and cooling to operate production processes. Likewise, development of commercial establishments, such as dry cleaning operations, would result in emissions of VOCs and potentially HAPs.

Management of emissions on a cumulative basis throughout the ROI would be accomplished through existing source permitting, monitoring and reporting requirements. All new sources would be subject to existing applicable permitting requirements. Air emission permit requirements and mechanisms incorporated in the EAC to insure proper management of existing and anticipated new source emissions are discussed below for criteria pollutants and ozone precursors.

Criteria Pollutants

Air pollution and poor visibility are persistent concerns in the DMA. Cumulative emissions of criteria pollutant are regulated through the CDPHE’s ACP and APEN application and approval process. Through this system ACP and APEN permit requirements are triggered by uncontrolled actual emission rates.

A construction permit would be required for any facility that has uncontrolled actual emissions of any criteria pollutant equal to or greater than the amounts listed in the following table and is otherwise not exempt (CDPHE 2005c)

CDPHE New or Modified Source Construction Permit Emission Thresholds*		
Criteria Pollutant	Uncontrolled Actual Emissions in Tons Per Year	
	Attainment/Maintenance Areas	Non-Attainment Areas
VOCs	5	2
PM ₁₀	5	1
Total Suspended Particulates	10	5
Carbon Monoxide	10	5
SO _x	10	5
Nitrogen Oxides	10	5
Lead	200 pounds per year	200 pounds per year

* Source CDPHE 2005c.

Permits are issued for the level of production/operation requested on the APEN. For criteria pollutants, APEN requirements differ for Colorado's attainment/maintenance and non-attainment areas. In general, an APEN is required for an emission point with uncontrolled actual emissions of any criteria pollutant equal to or greater than the quantity listed in the table below:

CDPHE APEN Criteria Pollutant Emission Thresholds*	
Area	Uncontrolled Actual Emissions
Attainment/Maintenance	2 Tons per Year
Non-Attainment	1 Ton per Year
All Areas	Lead Emissions: 100 pounds per year

*Source CDPHE 2005c.

Sources of non-criteria reportable air pollutants have different reporting levels depending on the pollutant, release point height and distance to property line.

Cumulative emissions of SO_x, CO and PM₁₀ would be adequately controlled and monitored through the existing CDPHE ACP and APEN permitting systems. If current permitting requirements are met, cumulative impacts from existing and anticipated new sources of criteria emissions would be considered moderate and would not be considered significant.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Source contributions to cumulative impacts associated with implementing either the Proposed Action or Alternatives 1 or 2 would be the development of approximately three acres of undeveloped land into an industrial facility and the operation of that facility. When assessed in conjunction with the ongoing and projected activities as discussed above, there are no significant unavoidable adverse impacts. Projected total emissions (Appendix C) are still below maximum allowable values. Therefore, cumulative impacts are expected to be minor.

4.1.3 Noise

The area evaluated for cumulative noise impacts encompass the geographic extent of the existing Buckley AFB noise contours. The proximity and relationship of the Buckley AFB to adjacent airfields was also considered.

Cumulative effects on ambient noise levels would be consistent with rapid light industrial and mixed-use development in an urban area. The only potential exception would occur during the actual construction for the development of the Aurora Area Development Plan (ADPs) and Existing Land Use Areas (ELUAs). CIP project construction is likely to be in active construction in varying intensities from 2004 through 2007 with fewer projects thereafter. The development of the ADPs would be concurrent with construction at the Fitzsimons Redevelopment area. As a result, there could be a negligible cumulative adverse impact on the ambient soundscape. The attenuation of noise over the distance and topography between the two sites would minimize this potential cumulative adverse effect.

The cumulative effects of rapid urban and transportation development combined with regional airport operations would have a moderate adverse cumulative impact on the local community. The introduction of increased human-caused noise levels would potentially result in a cumulative increase in impacts to the regional soundscape in conjunction with other plans and projects.

However, the attenuation of sound over distance and the phasing of development activity associated with other projects in the vicinity would reduce and minimize this potential cumulative effect on the local community. In general, there would be few if any projects other than regular airport operations and maintenance that would contribute to a cumulative effect on the urban environment.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Either the Proposed Action or Alternative 1 or 2 would have a short-term adverse cumulative effect as a result of noise associated with construction and a long-term cumulative impact associated with regular airbase and traffic operations within the region. These cumulative

impacts would be negligible, with the construction impacts likely to be more intense.

4.1.4 Soils

The area evaluated for cumulative impacts include all land to be disturbed within the eight ADPs, the seven ELUAs and soils that are located within a 100-foot buffer from the Buckley AFB boundaries.

Soil resources have been historically subjected to many sources of disturbance since the base was established in the 1940s. Past aircraft operations, localized wind, off road vehicles and military training have disturbed soils on Buckley AFB. Other sources of disturbance that have, and would continue to affect soils in the vicinity of the base include site excavation, grading, and outdoor recreational use (off-road vehicles, all terrain vehicles).

The incremental effect from future development of Buckley AFB on soil conditions would be indistinguishable from other types of urban development within the surrounding area. Silt fencing, temporary sediment basins, and other NPDES soil erosion control practices would reduce the small amount of soils lost during construction.

The proposed future land use and community development would bring additional personnel, vehicles, and aircraft operations in the region would produce a minor effect on soil resources. These effects would not be distinguishable from transportation and land development in the immediate area. Therefore cumulative effects would not result in long-term loss or impairment of soil resources.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Source contributions to cumulative impacts associated with implementing either the Proposed Action or Alternative 1 or 2 would be the development of approximately three acres of undeveloped land into an industrial facility and the operation of that facility. When assessed in conjunction with the ongoing and projected activities as discussed above, there are no significant unavoidable adverse impacts. Therefore, cumulative impacts are expected to be minor.

4.1.5 Water Resources

The geographic area evaluated for cumulative impacts on water resources includes the City of Aurora. Cumulative impacts on water resources (surface water, stormwater, and groundwater) would be created by the Proposed Action in combination with the increased utilities consumption and discharges resulting from other development in the vicinity of Buckley AFB. The potential cumulative impacts on water resources off-base would be similar to those described for Buckley AFB in Section 3.5 (i.e. erosion, contaminated runoff, spills, increased impervious surfaces and stormwater loading). The City of Aurora anticipates development of residential areas at approximately 1,800 new residential units per year. Assuming the new residential units average 2,000 ft² per unit, the growth rate would equal approximately 3.6 million ft² of building space per year. Office and industrial development is also projected to grow at a rate of 210 acres

(9,147,600 ft²) annually. Retail and commercial development would comprise approximately 20 acres per year (871,200 ft²).

Surface Water

The majority of the City of Aurora that could be developed that surrounds or is in proximity to Buckley AFB is also located within the South Platte River drainage basin. As with development on-base, City of Aurora development off-base could impact surface water during the ground disturbance phase of construction activities, including surface water contamination due to erosion, increased particulates, turbidity, and transport of particulate matter via stormwater runoff. These effects would be considered to be direct and indirect. The common BMPs for construction and demolition activities would be expected to be practiced at off-base City of Aurora project sites to minimize erosion and minimize potential affects of storage, handling and use of fuels, oils and other hazardous liquids.

Once completed, operation of completed City of Aurora structures and facilities would increase the impervious surfaces throughout the regions of development. Roofs, parking lots, sidewalks and walking paths would all reduce the areas in which precipitation can infiltrate the earth surface. Analysis from data in Appendix C estimates that the total cumulative increase of impervious surfaces due to Buckley AFB and City of Aurora development would total approximately 30,940 acres. The Proposed Action would result in less than a 0.04 percent change of the total 3,283 acre drainage area at Buckley AFB being impervious surface. Information related to the current impervious land area in the city was sought from the City Aurora. Although the information was not available, it is known that the total area of the City of Aurora is 142.7 square miles (91,328 acres), of which 0.2 square miles (128 acres) is water (streams, lakes, and ponds). Using these numbers, planned City of Aurora development would convert 27.5 percent of the total city area to impervious surfaces (excluding water area). The percentage increases to 27.8 percent when the Buckley AFB increased impervious surfaces are included in the calculation. As with Buckley AFB, the City of Aurora has extensive natural and man-made surface drainage as well as underground storm drainage lines that would convey increased stormwater volumes created from increased impervious surfaces.

Stormwater

City of Aurora development in proximity to Buckley AFB could impact surface waters including Box Elder Creek, First Creek, Sand Creek, Granby Ditch, Westerly Creek, Murphy Creek, Cherry Creek, Cherry Creek Reservoir, Meadowood Creek, Quincy Reservoir, West and East Tollgate Creek, Unamed Creek, Senac Creek, Aurora Reservoir, and Coal Creek. Of these surface waters, East Toll Gate Creek, Sand Creek and Murphy Creek receive flows from Buckley AFB. Cumulative impacts from Proposed Action and City of Aurora development would likely increase the volume of stormwater runoff received some, if not all, of the surface waters identified.

Operation of the completed buildings, parking lots, sidewalks and walking paths would create the additional runoff volume. Data in Appendix C provides estimates for cumulative stormwater discharge increases.

Once construction projects are completed a cumulative increase of approximately 30,940 acres of impervious surfaces is expected. Assuming an annual precipitation rate of 15.24 inches per year and no losses due to evaporation, the anticipated increase in stormwater due to the

cumulative action would be approximately 12,803 mg. It is not possible to determine the exact direction and volume of increased runoff off-base since the areas that will be developed are currently unknown and no studies or information are available.

Groundwater

As discussed earlier in this Section, the cumulative increase in impervious surfaces that would result from the Proposed Action and City of Aurora development would increase stormwater runoff and discharges. Assuming that 100 percent of the increased runoff caused by the loss of pervious surfaces is discharged as stormwater, there would be a loss of 12,809 mg that had previously been infiltrating and recharging the aquifers underlying the area considered. However, depending on hydrogeologic conditions, stormwater runoff that reaches the three receiving streams can recharge groundwater directly from the stream channel.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Source contributions to cumulative impacts associated with implementing either the Proposed Action or Alternative 1 or 2 would be the development of approximately three acres of undeveloped land into an industrial facility and the operation of that facility. When assessed in conjunction with the ongoing and projected activities as discussed above, the following assessments can be made:

- Some of the stormwater infrastructure components may need to be upgraded to facilitate increased stormwater flows.
- Cumulative impacts from ground disturbance related to construction can impact stormwater discharges. A NPDES stormwater CGP may be required for both on-base and off-base construction projects if they exceed the one acre threshold.
- As with impacts on-base, off-base development may cause increased stormwater loads that could result in existing stormwater infrastructure components being hydraulically overloaded, and increased concentrations of particulate matter and other contaminants being carried and discharged into receiving streams and waterbodies off-base. However, existing zoning and permitting requirements would require studies to be conducted prior to construction, and therefore, resulting impacts would not be expected to be significant.
- The cumulative affect on groundwater would be moderate.
- Potential effects on groundwater would be considered indirect, as the loss of water infiltrating and recharging aquifers underlying the area considered would potentially have impacts reaching beyond the area of consideration. Ultimately, cumulative impacts on groundwater would not be expected to be significant.

Therefore, cumulative impacts are expected to be minor.

4.1.6 Biological Resources

The cumulative impact of the Proposed Action on plant communities on and surrounding

Buckley AFB was determined by comparing the distribution of existing and recent past open space, agricultural and range acreages with projected land use changes in western Arapahoe and Adams counties. The ROI for this resource is western Adams County from Barr Lake State Park south to the Arapahoe/Douglas county line, and bounded by DIA on the east and the Stapleton airport development area on the west. During the second half of the 20th century this area consisted of a mosaic of rural, suburban and urban acreages. However, the relative percentage and rate of change from natural and low intensity agricultural land uses to high-intensity and urbanizing land uses has accelerated over the past 50 years.

The current distribution of land use and plant communities in the ROI indicates that of the 41,659 acres in the ROI, 42.68 percent are in dry land crops such as grains, grassland range and pastures; and greater than 18 percent is urban and mixed-grass prairie, respectively. In general terms one-fifth of the ROI exists as urban landscape and four-fifths is a mosaic of rangeland, short-grass and mixed-grass prairie, and dry land grain farming (NDIS 2004).

Wildlife

Wildlife populations and diversity in the cumulative impact ROI mirror the diversity and abundance of native plant communities. Undeveloped habitats in the ROI, particularly mixed grass prairie, while relatively abundant, are declining in the face of urban growth. This is a phenomenon common to metropolitan areas.

Threatened/Endangered Species And Species Of Special Concern

Within the ROI several species would be adversely impacted due to the cumulative effect of the other actions. As a result of general grassland habitat loss in the ROI due to the build-out of undeveloped land for commercial and residential use, several rare raptors including wintering bald eagles and ferruginous hawks; the black-tailed prairie dog and the burrowing owl; the loggerhead shrike; Northern leopard frog; olive-backed pocket mouse; and the swift fox would be adversely effected.

One nesting pair of bald eagles is known to exist within the ROI and a number of other individual eagles winter at the Rocky Mountain Arsenal (RMA) and surrounding landscape including Buckley AFB. A minor cumulative impact on this species would result from changes in the distribution of black-tailed prairie dog colonies within the ROI, as well as a decrease in black-tailed prairie dog acreage at Buckley AFB and along the E-470 corridor. Cumulative impact on the ferruginous hawk is similar to bald eagle. Long-term impact to water courses resulting from channeling and runoff severity changes due to urbanization would have a small adverse impact on the Northern leopard frog. The Preble's meadow jumping mouse is not known to inhabit the ROI (USFWS 2000). However, mixed grass prairie habitat used by the olive-backed pocket mouse occurs in the northern and southeastern portion of the ROI and would sustain some loss due to build-out of the E-470 corridor. Impacts to plains cottonwood riparian woodland would be minimal over the short-term due to regulatory constraints; and minor over the long-term, as a result of hydraulic changes due to regional increases in runoff peaks.

The black-tailed prairie dog (a state species of concern), burrowing owl, and associated grassland species would likewise be adversely affected within the ROI by conversion of rural property to urban uses. Currently, the ROI contains approximately 373 active black-tailed prairie dog colonies covering an area of 1,442.6 acres. This yields an average colony size of 3.86 acres. Two areas of concentration are evident: Buckley AFB and the RMA. Both of these areas are

managed by the federal government. RMA is a National Wildlife Refuge being managed for a variety of the grassland species including the black-tailed prairie dog. The current black-tailed prairie dog objective at RMA is to increase colony acreage from 660 acres in 2003 to approximately 2,000 acres in the near future (Stone, 2005). The 2,000 acre target would return colony acreage to the average high of 1,500 to 2,000 acres, which occurred in 1992, 1993, and 2000 (Stone, 2004). Cumulative impacts to black-tailed prairie dogs in the ROI include the build-out of Buckley AFB and the E-470 corridor, and infilling in currently developed portion of surrounding Aurora. Plague coupled with recent control measures used to insure that black-tailed prairie dogs do not interfere with mission objectives at Buckley AFB have reduced colony acreage to approximately 296 acres (ERO Resources, 2004). The build-out of Buckley AFB would result in the loss of approximately 184 acres of black-tailed prairie dog colony, and the development of the E-470 corridor is estimated to result in the loss of 77 acres for a total of approximately 261 acres of prairie dog colonies. This loss would be at least partially compensated by the continued management of RMA to raise the total acreage of black-tailed prairie dog colonies toward the historic average.

Recent research suggests that the frequency of bubonic plague return to colonies is related to colony proximity and size (larger, more aggregated colonies are infected more often). Thus the effect on plague may be positive for the non-RMA portion of the ROI. The increased size and density of black-tailed prairie dog colonies in the northwest portion of the ROI may have also have a positive impact on plague outbreaks because RMA is actively monitored and managed for plague to the extent that this growing, formerly susceptible colony location may be able to grow again without the threat of uncontrolled disease. As a result of management activities on both RMA and Buckley AFB, a small adverse cumulative impact would result from the Proposed Action.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

The cumulative impact to the distribution of urban, agricultural, and natural plant communities (habitats) is the sum of land use changes at Buckley AFB in addition to all other projected increases in urban acreage in the ROI. Planned urban growth in western Adams and Arapahoe counties through 2009 was extrapolated from recent city and county zoning plans in the ROI, particularly the E-470 corridor and the Northeast Plains area located east and northeast of Buckley AFB. This trend analysis indicates a decrease in acreage of all prairie plant communities and agricultural plant communities, and a corresponding increase in urban acreage (NDIS, 2004). This change constitutes a moderate adverse impact to the existing prairie and dryland crop plant communities of western Adams and Arapahoe counties.

The cumulative impact would be an adverse effect on native vertebrate and invertebrate animal populations, while suburban adapted species such as the English sparrow, feral cat and dog, starling, Norway rat, and house finch would benefit. Species specifically associated with black-tailed prairie dog colonies, such as the burrowing owl, ferruginous hawk and mammalian predators such as the badger would be positively impacted within the ROI due to the management of the RMA for black-tailed prairie dogs by the USFWS. Other grassland species

which are not primarily associated with these squirrel colonies would likely sustain a long-term loss of habitat, however, this would not be considered significant.

Although the cumulative impact on the black-tailed prairie dog may be a positive increase of colony acres, the colony distribution would change so that colonies are more clumped in the northern portion of the ROI, and more diffuse in the remainder of the ROI.

4.1.7 Hazardous Materials and Waste

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

The geographic area evaluated for HAZMAT and hazardous waste cumulative impacts includes the City of Aurora. Cumulative impacts of implementing either the Proposed Action or Alternative 1 or 2 related to HAZMATs used for construction/demolition activities and operation of completed facilities coupled with other off-base new construction and operation projects (within the City of Aurora and County of Arapahoe Comprehensive Plans) would depend on the quantity and nature of the materials used and waste generated. The quantity and the exact nature of the materials used on a cumulative basis are unknown. However, proper management and use of HAZMATs would prevent any resulting substantial impacts. If appropriate BMPs and sound designs are employed, and adherence to all federal, state, and local regulations dealing with hazardous wastes are followed, no significant cumulative impacts related to hazardous materials or wastes would be expected.

4.1.8 Solid Waste and Pollution Prevention

Cumulative solid waste generation estimates can be made using the following assumptions:

- Three (3) individuals would live in each residential unit constructed in the City of Aurora.
- Residential waste generation rates 15 lbs per person per day.
- Business Office and Industrial facility waste generation rates are 60 lbs per 1,000 ft² building area per day.
- Retail and Commercial facility waste generation rates are 40 lbs per 1,000 ft² building area per day.

Cumulative impacts of increased solid waste generation would reach a maximum in the years following 2010, when the majority of the Buckley AFB Proposed Action construction and demolition projects are completed, generating an additional 1,377,761 tons of waste per year (Appendix C). Following the completion of all construction and demolition projects, the cumulative annual solid waste generation rate would decrease to 1,305,524 tons of waste per year, since wastes from construction and demolition activities would not be generated at Buckley AFB.

The cumulative solid waste generation increase would increase the waste volume sent to the Denver Arapahoe Disposal Site landfill by 60.4 percent in the maximum year, and 57.3 percent once all construction and demolition projects are completed.

The Denver-Arapahoe Disposal Site landfill is designed with an estimated life-span of 40 to 50 years.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Cumulative solid waste generation impacts created by implementing either Proposed Action or Alternative 1 or 2 at Buckley AFB in concert with planned City of Aurora expansion would be met by the existing life-span and capacity of the landfill and, therefore would not be considered significant.

4.1.9 Transportation

The area evaluated for cumulative impacts includes highways, major and minor arterials and proposed Rapid Transit Lines (RTLs) within the City of Aurora transportation framework surrounding Buckley AFB.

Portions of the Denver Metropolitan Area (DMA's) roads would begin to deteriorate at an accelerated rate in the next several years and the current percentage of roads listed in "Good or Fair" condition would dwindle from the present 55 percent to below 30 percent in the next five to ten years (MDEDC, 2004). Due to these circumstances, the number of road upgrades and maintenance projects in the DMA would increase. In addition, the traffic volumes on Aurora's east-west streets immediately east of I-225 have increased causing congestion.

If the City of Aurora is developed according to its projected future growth rate, approximately 452,783 new vehicle trips per day could occur. With the projected 89,972 additional Buckley AFB-generated trips per day by the year 2010 (Appendix C), Buckley would account for 19.9 % in of the increase, and would represent only 16.6% of the total traffic volume. There would be moderate increases in traffic congestion in the surrounding transportation network as a result of this urban development.

Traffic congestion would be reduced by regional transportation projects along corridors critical to the City of Aurora and by 41 City of Aurora CIP roadway and other planned Transportation Improvement Program projects planned for 2003-2008.

The forecasted traffic is the total number of trips that could be added in the transportation network surrounding Buckley AFB over and above the projected growth of traffic levels through 2010. Although these numbers seem high, it should be noted that they represent the worst case scenario of developing all currently developable land to the highest degree possible according to the current land use regulations.

Developable land within the surrounding community may be built at lower densities than the maximum allowable by the current zoning regulations. Alternative modes of travel would be increased by the additional bus services and light rail, bike and pedestrian trails planned for the area.

The increase in mixed use development on-base and within concentrated areas such as the Fitzsimons Redevelopment Authority heighten the potential for alternate transport usage. The

projected increase in the employment base linked with development of appropriate housing types would reduce the amount and length of work trips by increasing the number of people who both live and work in these new development centers.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Source contributions to cumulative impacts associated with the addition of eleven personnel with the implementation of either the Proposed Action or Alternative 1 or 2 would therefore be minor.

4.1.10 Utilities

The geographic area evaluated for cumulative impacts on utilities includes the City of Aurora. Cumulative impacts on utilities (water supply; wastewater treatment; solid waste generation; and electricity and gas consumption) would be created by the Proposed Action in combination with the increased utilities consumption and discharges resulting from other development in the vicinity of Buckley AFB. The City of Aurora anticipates development of residential areas at approximately 1,800 new residential units per year (Buckley AFB, 2002a). Assuming the new residential units average 2,000 ft² per unit, the growth rate would equal approximately 3.6 million ft² of building space per year. Office and industrial development is also projected to grow at a rate of 210 acres (9,147,600 ft²) annually (Buckley AFB, 2002a). Retail and commercial development would comprise approximately 20 acres per year (871,200 ft²) (Buckley AFB, 2002a).

Water Supply

Water consumed by new business, office, industrial, retail, and commercial buildings would depend on their size, number of employees, nature of operations, products produced, etc. Data in Appendix C presents future projections of water usage.

Cumulative impacts of increased water use would reach a maximum in the years following 2010, when the majority of the Buckley AFB Proposed Action construction and demolition projects are completed, requiring an additional 8,739 million gallons per year (mgy). Following the completion of all construction and demolition projects, the cumulative annual water use increase would decrease marginally since no water would be used for dust suppression related to these activities. The cumulative water use increases would require the City of Aurora to increase water treatment and distribution capacity by approximately 64 percent (from current output of 13,580 mgy in 2003 to 22,319 mgy).

The City of Aurora CIP projected water demand increases up to 82,457 acre-feet per year in 2010 (City of Aurora, 1998). This value equals 26,870 mgy. The City of Aurora has budgeted to expand existing and construct new water infrastructure facilities (including reservoirs, treatment plants and distribution networks) to meet the anticipated demand increases.

Wastewater Treatment

Cumulative wastewater generation increases would be proportionate with water use increases.

The Metro Wastewater Reclamation District provides wholesale wastewater transmission and treatment service to 58 local governments in the DMA, including the City of Aurora, and is currently treating approximately 160 mgd. If all cumulative increases in water use, with the exception of irrigation water, are assumed to be discharged and require treatment as a result of implementing the Proposed Action at Buckley AFB in combination with planned City of Aurora expansion, wastewater discharged to the Metro Wastewater Reclamation District would increase by approximately 8,738 mgd or 23.9 mgd.

Electricity and Natural Gas

The increase in electricity demand resulting from implementation of the cumulative actions on Buckley AFB would result in an annual consumption rate of 141,919,068 kWh. Full implementation of the cumulative actions on Buckley AFB would result in an annual natural gas consumption rate of 210 million cubic feet (mmft³) (Appendix C). Predicting increases in electricity and natural gas demands from anticipated City of Aurora development is difficult. These predictions for residential housing development are possible. Predictions for business offices, industrial, retail and commercial facilities is more challenging because it is difficult to predict the use and functions that would take place in these facilities. For example, a warehouse of a certain size would require a relatively minimal amount of electricity and natural gas when compared to an equal sized manufacturing facility, with high-energy demand equipment and machinery operating. For the purposes of this EA increases in electricity and natural gas demands from anticipated City of Aurora development will be estimated using 45 kWh and 50 ft³ per ft² new construction per year, respectively for all building types. Using these assumptions annual usage would be 40,337,514,000 kWh for electricity and 44,819 mmft³ for natural gas.

Cumulative impacts of increased electricity and natural gas demands would reach a maximum in the years following 2010, when the majority of the Buckley AFB CIP EA Proposed Action construction and demolition projects are completed, increasing demands by 7,381,375,335 kWh and 8,211 mmft³ per year for electricity and natural gas, respectively. Additional construction and demolition projects are programmed beyond FY10 are not specifically addressed in this EA because their proposed construction years have not been determined. However, the information that was available was consolidated under to be determined projects.

Water supply and wastewater treatment are services provided by government-owned utilities. Solid waste management is conducted by Waste Management, who operate the Denver-Arapahoe Disposal Site under a long-term contract arranged with the City and County of Denver. Electricity and natural gas are provided by non-governmental, independent industries. These industries forecast and increase supplies in direct response to consumer demand. The suppliers of electricity and natural gas would increase production and supply of those resources as the cumulative consumer demand increases.

No Action Alternative

Source contributions to cumulative impacts of the No Action Alternative would not occur as construction of the Freight Transfer Facility would not take place. Cumulative impacts to the No Action Alternative are expected to be negligible.

Proposed Action and Alternatives 1 and 2

Cumulative impacts on water supply created by implementing either the Proposed Action or

Alternative 1 or 2 at Buckley AFB in concert with planned City of Aurora expansion would be met by expanding existing and constructing new water infrastructure facilities, and would therefore not be considered significant.

Since the Metro Wastewater Reclamation District treatment plant is designed to meet population growth estimates through 2010, with a hydraulic capacity of 185 mgd, and the cumulative impacts would increase wastewater treatment demands only to 183.9 mgd, impacts associated with the implementing either the Proposed Action or Alternative 1 or 2 at Buckley AFB in concert with planned City of Aurora expansion would not be considered significant.

Cumulative electricity and natural gas demand impacts created by implementing either the Proposed Action or Alternative 1 or 2 at Buckley AFB in concert with planned City of Aurora expansion would be met by the suppliers increasing supplies, and therefore, would not be considered significant.

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Appendix A

Air Emission Worksheets

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Assumptions used in ACAM calculations:

- Construction would begin in the fourth quarter of 2007.
- Site grading and preparation would last approximately 30 days.
- Facility construction would last approximately 180 days.
- Area to be prepared would be approximately 3 acres.
- Area to be paved would be approximately 0.4 acres based on the following:
 - Freight Transfer facility would accommodate 5 GOV's and 11-13 POVs, 7 loaders/tractor trailers and pallet storage area.
 - Assumption is loaders etc. are 6 times the size of a normal vehicle (conservative estimate). 18 vehicles *300 sq.ft. plus 7 loaders/tractor trailers * 6 * 300 sq.ft. for other vehicles/equipment

USAF Air Conformity Applicability Model

Emissions Summary Information

Scenario: DEFAULT
Installation: Buckley AFB

Emissions Summary Report For 2007

SOURCE CATEGORY			Emissions, Ton/Year					
			CO	NOX	SO2	VOC	PM10	PM2.5
Area Sources	I Const.	- Grading Ops.	0.00	0.00	0.00	0.00	0.39	0.00
Other Phase								
Other Phase	II Const.	- Acres Paved	0.00	0.00	0.00	0.00	0.00	0.00
Other Phase	II Const.	- Mobile Equip.	0.29	0.68	0.08	0.06	0.05	0.00
Other Phase	II Const.	- Non-Res.	0.00	0.00	0.00	0.03	0.00	0.00
Arch. Ctgs.								
Other Phase	II Const.	- Res. Arch.	0.00	0.00	0.00	0.00	0.00	0.00
Other Phase	II Const.	- Stationary Equip.	1.94	0.05	0.00	0.07	0.00	0.00
Other Phase	II Const.	- Workers Trips	0.04	0.00	0.00	0.00	0.00	0.00
Other Phase	I Const.	- Grading Equip.	0.02	0.09	0.01	0.01	0.01	0.00
Total			2.29	0.83	0.10	0.18	0.46	0.00
Grand Total			2.29	0.83	0.10	0.18	0.46	0.00

USAF Air Conformity Applicability Model

Emissions Summary Information

Scenario: DEFAULT

Installation: Buckley AFB

Emissions Summary Report For 2008

SOURCE CATEGORY	Emissions, Ton/Year					
	CO	NOX	SO2	VOC	PM10	PM2.5
Area Sources						
Other Phase II Const. - Workers Trips	0.08	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Acres Paved	0.00	0.00	0.00	0.00	0.00	0.00
Other Phase II Const. - Mobile Equip.	0.56	1.33	0.16	0.12	0.11	0.00
Other Phase II Const. - Non-Res. Arch. Ctg.	0.00	0.00	0.00	0.06	0.00	0.00
Other Phase II Const. - Stationary Equip.	3.78	0.10	0.00	0.14	0.00	0.00
Other Phase II Const. - Res. Arch. Ctg.	0.00	0.00	0.00	0.00	0.00	0.00
Total	4.41	1.43	0.17	0.33	0.11	0.00
Mobile Sources						
Mobile - Base Employee Commute VMT	0.60	0.03	0.00	0.03	0.00	0.00
Mobile - On-Road GOV VMT	0.01	0.00	0.00	0.00	0.00	0.00
Off-Road Base Support Vehicles	0.02	0.01	0.00	0.00	0.00	0.00
Total	0.64	0.04	0.00	0.03	0.00	0.00
Point Sources						
Miscellaneous Point Sources	0.00	0.00	0.00	0.00	0.00	0.00
Other Const. - Facility Heating	0.03	0.04	0.00	0.00	0.00	0.00
Residential Space Heating	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.03	0.04	0.00	0.00	0.00	0.00
Grand Total	5.08	1.51	0.17	0.36	0.11	0.00

USAF Air Conformity Applicability Model

Emissions Summary Information

Scenario: DEFAULT
Installation: Buckley AFB

Emissions Summary Report For 2009

SOURCE CATEGORY	Emissions, Ton/Year					
	CO	NOX	SO2	VOC	PM10	PM2.5
Mobile Sources						
Mobile - Base Employee Commute VMT	1.16	0.05	0.00	0.05	0.00	0.00
Mobile - On-Road GOV VMT	0.03	0.00	0.00	0.00	0.00	0.00
Off-Road Base Support Vehicles	0.04	0.02	0.00	0.00	0.00	0.00
Total	1.23	0.07	0.00	0.06	0.00	0.00
Point Sources						
Residential Space Heating	0.00	0.00	0.00	0.00	0.00	0.00
Miscellaneous Point Sources	0.00	0.00	0.00	0.00	0.00	0.00
Other Const - Facility Heating	0.04	0.05	0.00	0.00	0.00	0.00
Total	0.04	0.05	0.00	0.00	0.00	0.00
Grand Total	1.27	0.12	0.00	0.06	0.01	0.00

USAF Air Conformity Applicability Model

Conformity Screening

Scenario: DEFAULT

Installation: Buckley AFB

Conformity Code: GREEN

(Conformity determination is not required based on applicability screening.)

Tons/Year Emissions For 2007

	CO	NOX	VOC	SO2	PM10	PM2.5
Proposed Action Emissions:	2.29	0.83	0.18	0.10	0.46	0.00
De Minimis Thresholds :	100	100	100	N/A	100	N/A
10% of Regional Emissions Inventory:	67817	11278.5	16790	N/A	3215.6	N/A
Buckley AFB Emissions:	104	85	4	11	11	N/A
Regional Inventory Year:	2004					
Installation Emissions Inventory Year:	2006					
County Attainment Status Year:	2004					

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Web Address : www.cdphe.state.co.us

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USAF Air Conformity Applicability Model

Conformity Screening

Scenario: DEFAULT

Installation: Buckley AFB

Conformity Code: GREEN

(Conformity determination is not required based on applicability screening.)

Tons/Year Emissions For 2008

	CO	NOX	VOC	SO2	PM10	PM2.5
Proposed Action Emissions:	5.08	1.51	0.36	0.17	0.11	0.00
De Minimis Thresholds :	100	100	100	N/A	100	N/A
10% of Regional Emissions Inventory:	67817	11278.5	16790	N/A	3215.6	N/A
Buckley AFB Emissions:	104	85	4	11	11	N/A
Regional Inventory Year:	2004					
Installation Emissions Inventory Year:	2006					
County Attainment Status Year:	2004					

Point of Contact Information

Air Agency/AQCD: Air Pollution Control Division

Web Address : www.cdph.state.co.us

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USAF Air Conformity Applicability Model

Conformity Screening

Scenario: DEFAULT Installation: Buckley AFB

Conformity Code: GREEN

(Conformity determination is not required based on applicability screening.)

Tons/Year Emissions For 2009

	CO	NOX	VOC	SO2	PM10	PM2.5
Proposed Action Emissions:	1.27	0.12	0.06	0.00	0.01	0.00
De Minimis Thresholds :	100	100	100	N/A	100	N/A
10% of Regional Emissions Inventory:	67817	11278.5	16790	N/A	3215.6	N/A
Buckley AFB Emissions :	104	85	4	11	11	N/A
Regional Inventory Year:	2004					
Installation Emissions Inventory Year:	2006					
County Attainment Status Year:	2004					
Point of Contact Information						
Air Agency/ AQCD: Air Pollution Control Division						
Web Address : www.cd.phe.state.co.us Phone:(303)692-3100						

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Appendix B

Buckley Construction Project List

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Project Number	FY	Bldg No.	Projects	Project Footprint (m ²)**	Project Footprint (ft ²)**	Design / Actual Footprint (ft ²)**	Actual parking (ft ²)
	02	1	BX/Commissary (completed)			200,152	
	02	35	Fitness Center (completed)	6308	54500	67900	
	02		Gas Meter House				
	02	2	Telluride Gate (completed)	11	120	133	
	03	1030	460 SW Headquarters (Completed)	4744	51066		88086
	03		ADAL SBIRS Mission Control (Under construction)	1672	18000		
	03	725	Child Development Center 4 room Addition (Bldg 725)	69	743		
	03	1530	Control Tower (COANG) (Completed)	539	5800	4949	
	03	25	Demolish Building 25 (completed)		?		
	03	960	Engine Shop Addition Bldg 960 (COANG)	186	2000		
	03	1019	Entomology (O&M) Replace Entomology Shop (Completed)	209	2255		
	03	806	Fire Station Addition (Completed)	2000	21531		
	03	n/a	Remove Golf Driving Range (Completed)	1	12		
	03	703	H-70 Fuel Storage Facility	97	1045	178	
	03	n/a	New northern runway extension (COANG)	3484	37500		
	03	n/a	Repair Runway, Taxiways, Ramps (COANG)	181161	1950000		
	03	n/a	Two Pavilions at Williams Lake (Completed)	6	60		
	03	1015 and 1017	Two Warehouses - Civil Engineering. Originally one warehouse.(Completed)	929	10000	10000	
	04	39	Demo Gas Meter House				
	04	205	Dormitory II (144 person) Originally 02 (Completed)	5040	54,250	57,528	
	04	n/a	ADD/Alter Access Roads (Airfield) (COANG)	41204	443520		

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
	04	n/a	Approach Lighting (COANG)	62	672		
	04	830	Civil Engineering Complex (COANG)	3470	37350		
	04	17906	Fire Training Facility - originally 08 (Under Construction)		3,400 buildings, 41,112 concrete pads		
	04	n/a	Impound Lot (asphalt paved)	743	8000		
	04	801	Maintain Maint Hangar 801 (COANG)	Interior	Interior		
	04		New East Gate (estimate based on existing structure at Peterson AFB)	12	128		
	04		New Visitor Center (estimate based on existing structure at Peterson AFB)	49	525		
	04	841	Repair ANG Supply, Bldg 841 (COANG)	Interior	Interior		
	04	n/a	Repair Parking Lot East of Bldg 471	12	316798		
	04	n/a	Repair Parking Lots ANG wide (COANG)	12	144000		
	04	n/a	Upgrade Base Infrastructure, Ph III	n/a	n/a		
	04	n/a	Military Family housing = 71 acres total land (for houses, landscaping, roads etc). Total acreage includes the clubhouse/pool and playgrounds.(Under Construction)	66175	712298		
	05	1500	Army Aviation Support Facility (COARNG) (Under Construction)	11148	120000		
	05	n/a	Athletic Fields (two ball fields, 1 track, and 1 football field) (Ball Fields Complete)	160 Parking Spaces	Fence 3,600 meters		
	05	n/a	CDCII Pre school Playground	818	8800		
	05	n/a	CDCII Pretoddler Playground	486	5225		
	05	n/a	CDCII Toddler Playground	599	6450		

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
CRWU043006	05	316	Chapel Center (Complete)	2423	26080		
CRWU043007	05	351	Child Development Center CDCII (Under Construction)	2248	24197		
	05	n/a	Construct 2 SWS/MCS Force Protection - just installing barriers				
CRWU051092	05	19	Demolish Building 19 (Camana Club) (Completed)				
CRWU061006	05	1011	Demolish Warehouse (1011/1012) Was an FY 05 Project. (Completed)		22949		
	05	600	Medical Clinic ADAL (Completed)	424	4563		
	05	n/a	Repair Taxiways A&K	Unknown at this time	Unknown at this time		
	05	n/a	Vail Street Improvements	8475	91200		
CRWUC071007	06	n/a	Storm Water Retention Pond				
CRWU033009	06	1022	Outdoor Rec Equip Rental (NAF) - originally 05, then awarded 06 (Under Construction)	865	9310		
CRWU051101	06		Medical Warehouse (Poss construct with '06 funds) (Under Construction)	372	4000		
CRWU033009	06	204	Car Wash (AAFES) 4 bay (Under Construction)	186	2000		
CRWU787395	06	1025	Haz Materials Storage (Env. Level 1) HAZMART Pharmacy Construction initiated in 06. (Under Construction)	507	5457		
CRWU787399	06	1025	Haz Waste Facility (Env. Level 1) Construction initiated in 06. (Under Construction)	150	1615		
CRWU061035	06	306	Demolish Entomology Facility (306) Originally FY04, then '08, then '06 if funded	108	1160		
CRWU031112	06		ADF Parking Lot Mod-1				

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
	07	n/a	Athletic Fields Concession (NAF)	130	1399		
CRWU053006	07	730	Communications Center (ADAL 730) orig 05 - moved to 07	5666	60988		
CRWU063006	07	347	Consolidated Services Facility Admin	1476	15892		
CRWU063003	07	1032	Leadership Development Center (Under Construction)	1638	17631		
CRWU073006	07	350	Youth Center (NAF) 06 MILCON project	2656	28586		
CRWU073005	07		Military Working Dog Kennel	325	3500		
CRWU061039	07	302	Demolish Fuels Admin (302) Construction 07, then 09, possibly '06 if funded.		1185		
CRWU052063	07		Repair Alert Taxiway L Pvts				
CRWU062002	07		Repair Taxiway "M"				
CRWU073008	07	1051	-POL Ops Building	255	2745		
CRWU073008	07	1054	-Pump house	93	1001		
CRWU073008	07	1053	-Storage Pol Bulk Ops Building	42	452		
CRWU073008	07	Mult	Consolidated Fuels Includes Demo of existing structures, construction of POL Ops Bldg, Pump House, and Storage POL Bulk Ops Bldg - are all listed separately in this table) NOTE: 06 Construction Project, proposed NTP is Jan 07; therefore, considering 07 project.	390	4198		
	07		Construct ADF Admin Facility	2788	30000		
CRWU083001	07		Freight Transfer Facility	1115	12000		
	07	1606	Demolish Crash House (1606)		8327		
CRWU033003	07	332	Temporary Lodging Facility (NAF) Originally 03	6450	69434	84377	
CRWU033003	07	331	Visitors Quarters	3676	39568	39568	
CRWU059006	07	701	Squadron Ops Facility (COANG)	2132	22950		

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
CRWU029003	07	911	Alert Crew Quarters (COANG)	604	6500		
CRWU041108	08	1540	BITC Mailroom	372	4000		
CRWU041017	08		Youth Baseball Field (Originally part of youth athletic fields).				
	08		ADF Parking Lot Mod-2				
CRWU073008	08	341	Demolish Bulding 341 (Part of consolidated fuels)		216		
CRWU061012	08		FAMCAMP - originally 07, RV Parking Sites 38, Tent Sites 10 each				
CRWU053007	08	1027	Vehicle Maintenance Facility - originally 07 (joint COANG)	3504	37717		
CRWU048002	08	208	Satellite Pharmacy	557	6000		
CRWU019119	08	805	ADAL Weapons Release Complex (ADAL COANG). Was '09, then '13, then '08.	372	4000		
	09		NSA CSS, was '08	46468	500000		
CRWU051014	09	902	Demolish Building 902 Originally 05 project, then '08 and possibly '09 if funded		4428		
CRWU051013	09	n/a	Demolish Marine Area Foundations Originally 05 project then '08, then '09 if funded		Unknown at this time	Unknown at this time	
CRWU073008	09	200	Demolish Fuel Storage (200) Constuction 07, if funded		1576		
CRWU073008	09	200	Demolish Fuel Tanker Stands Construction 07	Unknown at this time	Unknown at this time		
CRWU073008	09	300	Demolish Fuels Lab (300) Construction 07,		1503		
CRWU063002	09	1026	Logistics Readiness Complex - originally 06, now states in clear zone	2290	24650		
CRWU041130	09		RV Storage Lot (ADAL)	57700	621075		
	09		North Runway Extension (Construct, COANG)	49821	536274		
CRWU091001	09	31	Demolish Building 31 Originally FY 09, then 10 and possibly '12 if funded.		204		

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
CRWU071003	10	950	Demolish Building 950 Originally FY07, then '09, possibly '07 if funded.		20303		
	10		South Runway Repair (COANG)	50047	538704		
CRWU103003	10		Bowling Center and Community Activities (Peterson)_	3307	35600		
CRWU081002	10		Youth Soccer Field				
CRWU041017A	10		Youth Softball Field				
	11		West Parking Lot				
CRWU071002	11	940	Demolish Building 940 Originally FY07, possibly '10 if funded		14758		
CRWU033008	11		Arts, Crafts, Auto Skills Development Ctr	1033	11119		
CRWU073003	11	345	Education Center/Library Originally 07	2193	23605		
CRWU049013	11	n/a	East Parking Apron Relocation (COANG). Was FY '12	33696	362700		
CRWU051011	12	1631	Demolish Electrical Shop (1631) Originally 05 project, then '08 if funded		3025		
CRWU051013	12	n/a	Demolish Marine Area Foundations Originally 05 project then '09 if funded		Unknown at this time	Unknown at this time	
CRWU041012	12	1620	Demolish Radio Relay Bldg (1620) Originally 04 then possibly '08 if funded	149	1600		
CRWU051012	12	1632	Demolish Reserve Forces Bldg (1632) Originally 05 project then possibly '08 if funded.		600		
CRWU071001	12		Demolish Engine Test Pad Originally FY07		2057		
CRWU051079	12	310	Demolish Hydrazine Bldg (310) Originally FY 04 then 10 and possibly 13 if funded.	76	820		
CRWU063001	12+		Fire/Crash Rescue Station	2137	23000		
CRWU053002	12+		Telluride Entry Gate	567	6107		

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
CRWU053004	12+		6th Ave Entry Gate. Was'11	885	9528		
CRWU053005	12+		Mississippi Entry Gate	902	9709		
CRWU093002	12+	447	Spaced Based Infrared (SBIR) Operational Support Facility Originally 09.	8820	94940		
CRWU013001	12+	447	Spaced Based Infrared (SBIR) Remote Ground Station. Was FY'11	1900	20451		
CRWU019118	12+		Weapons Loading Training Facility (COANG) originally 09 - requesting 08	929	10000		
CRWU909724 44300 sy	13	11603	Taxiway and Arm/Disarm (COANG) Includes Demoliton of existing parking apron and protion of Sunlight Road and taxiways F, W, X, and Y. Originaly 08		75 feet by 10,500 linear feet and holding pads 225 feet by 400 LF (paved)		
CRWU053009	13	35	Fitness Center ADAL (estimate based on existing swimmint pool at Peterson AFB) Originally 09	3345	36000		
CRWU073004	13	807	SF Operations Facility - was 06, then 07	3252	35000		
CRWU061164	14		Adult Softball Field				
	15		Dormitory 3 (96 PN)	3717	40000		
CRWU051084	15		Entry Control Facility (upgrade-was 08)	1337	14391		
CRWU063011	15	806	Fire Station Additon (crash house) - 2 Originally 09 - requesting FY 07. Joint ANG/AF	985	10600		
CRWU073010	15	1023	Consolidated Base Warehouse Originally 08	4645	50000		
CRWU063008	15	1600	Small Arms Range Indoor Arm Range - indoor with outdoor grenade launcher (originally 06)	2205	23735		
CRWU103002	15	multi	Upgrade Based Infrastructure Ph IV. Originally 09	Unknown at this time	Unknown at this time		

Project Number	FY	Bldg No.	Projects	Project Footprint (m²)**	Project Footprint (ft²)**	Design / Actual Footprint (ft²)**	Actual parking (ft²)
CRWU069201	16		Upgrade Weapons Live Load Area (COANG)	929	10000		
	TBD		Expand Bldg 700 (COANG)				
Either interior, or otherwise catexed, therefore not included in the EA - even under cumulative.							
Paving only, no structures							
Insufficient information to date to include in an EA							
** Project footprint does not include disturbance due to construction; such as, laydown areas and generally doesn't include parking lots							
Updated 11 September based on Aug 06 Facilities Board							
(1) Community Center only							

Appendix C

Cumulative Impact Analysis Data

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Insert data tables

Appendix D

Air Force 813 Form

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Insert Air Force 813 Form

Appendix E

Notice of Availability and Affidavit of Publication

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Notice of Availability for Construction and Operation of a Freight Transfer Facility at Buckley AFB

Interested parties are hereby notified that Buckley Air Force Base (AFB) has prepared a Draft Environmental Assessment (EA) and a Draft Finding of No Significant Impact (FONSI) for the proposed construction and operation of a Freight Transfer Facility.

Statutory Authority. This notice is being issued to interested parties in accordance with the National Environmental Policy Act (Public Law [P.L.] 91-190, 42 United States Code 4321 et seq.) as amended in 1975 by P.L. 94-52 and P.L. 94-83.

Purpose. The purpose of and need for the Proposed Action is based on the current and future requirements of the Air Force Element Program Resource Office (AFE PRO) and Defense Courier Service (DCS) on Buckley AFB. The increasing amount of cargo being stored, consolidated, and/or distributed at Buckley AFB, is exceeding the capacity of the government and their contractors. Additionally, the mission moves sensitive and/or classified cargo, requiring delivery aircraft to be roped off and guarded by Buckley AFB security personnel until unloaded.

Proposed Action. Under the Proposed Action, AFE PRO & DCS is proposing to construct and operate a Freight Transfer Facility at Buckley AFB. This proposed 12,000 square foot (ft²) facility, associated parking, utilities, and security will accommodate the mission beddown of AFE PRO & DCS on Buckley AFB. The proposed facility will be sited adjacent to taxiway H, north of taxiway D.

Alternatives. There are two alternative locations for the new Freight Transfer Facility; just north of the preferred site location, and south near the current fire department. The footprint of the Freight Transfer Facility would be the same under either the Proposed Action or the two alternatives.

Under the No Action Alternative, the Freight Transfer Facility would not be built and operations would remain as currently accomplished, not allowing for future growth.

Comments. Comments on the Draft EA and Draft FONSI should be directed to Elizabeth Meyer, 460 CES/CEVP, 660 S. Aspen Street (Stop 86), Bldg. 1005, Room 178, Buckley AFB, Colorado 80011-9551; 720-847-7159. The comment period is open for 30 days following the publication of this notice in a general circulation newspaper. Copies of the Draft EA and Draft FONSI are available for review by the public at the Aurora Central Library, 14949 E. Alameda Parkway, Aurora, Colorado 80012; Denver Public Library, Government Documents Section, 10 West 14th Avenue, Denver, Colorado 80204; and the Boulder Public Library, 1000 Canyon Blvd., Boulder, Colorado 80302. Copies can also be obtained by writing to Buckley AFB at the address provided above.

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**AURORA SENTINEL
PROOF OF PUBLICATION**

**STATE OF COLORADO
COUNTY OF ARAPAHOE }ss.**

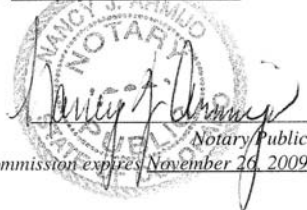
I HARRISON COCHRAN, do solemnly swear that I am the PUBLISHER of the AURORA SENTINEL; that the same is a weekly newspaper published in the County of Arapahoe, State of Colorado and has a general circulation therein; that said newspaper has been published continuously and uninterruptedly in said County of Arapahoe for a period of more than fifty-two consecutive weeks prior to the first publication of the annexed legal notice or advertisement; that said newspaper has been admitted to the United States mails as second-class matter under the provisions of the Act of March 30, 1923, entitled "Legal Notices and Advertisements", or any amendments thereof, and that said newspaper is a weekly newspaper duly qualified for publishing legal notices and advertisements within the meaning of the laws of the State of Colorado.

That the annexed legal notice or advertisement was published in the regular and entire issue of every number of said weekly newspaper for the period of 1 consecutive insertions; and that the first publication of said notice was in the issue of said newspaper dated March 29 A.D. 2007 and that the last publication of said notice was in the issue of said newspaper dated March 29 A.D. 2007.

In witness whereof I have hereunto set my hand this 29 day of March.

H. Ha. Cochran

Subscribed and sworn to before me, a notary public in the County of Arapahoe, State of Colorado, this 29 day of March A.D. 2007.


Nancy S. Smith
Notary Public
My Commission expires November 26, 2009

**NOTICE OF AVAILABILITY FOR
CONSTRUCTION AND OPERATION OF
A FREIGHT TRANSFER FACILITY
AT BUCKLEY AFB**

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Publication: March 29, 2007
Aurora Sentinel

**THE Denver Newspaper Agency
DENVER, CO**

PUBLISHER'S AFFIDAVIT

**City and County of Denver,
STATE OF COLORADO, SS.**

Jean Birch

..... being of lawful
age and being first duly sworn upon oath, deposes and says:

Legal Advertising Reviewer

That he/she is the
Of The Denver Newspaper Agency, publisher of the Denver Post and
Rocky Mountain News, daily newspapers of general Circulation published
and printed in whole or in part in Denver, in the County of Denver and
State of Colorado, and that said newspaper was Prior to and during
all the time hereinafter mentioned duly qualified For the publication of
legal notices and advertisements within the Meaning of an Act of the
General Assembly of the State of Colorado,
Approved April 7, 1921, as amended and approved March 30, 1923;
And as amended and approved March 5, 1935, entitled "An Act
Concerning Legal Notices, Advertisements and Publications and the
Fees of printers and publishers thereof, and to repeal all acts and parts
Of acts in conflict with the provision of this Act" and amendments
Thereto:

That the notice, of which the annexed is a true copy, was published in
The said newspaper to wit: (dates of publication)

March 23, 2007

Signature

Jean Birch

Subscribed and sworn to before me this *23* day

Of . . . March . . . A.D. 2007.

Susan Sloan

Notary Public.

My commission expires *8/15/10*



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Appendix F

Interagency Coordination Letters

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To be inserted